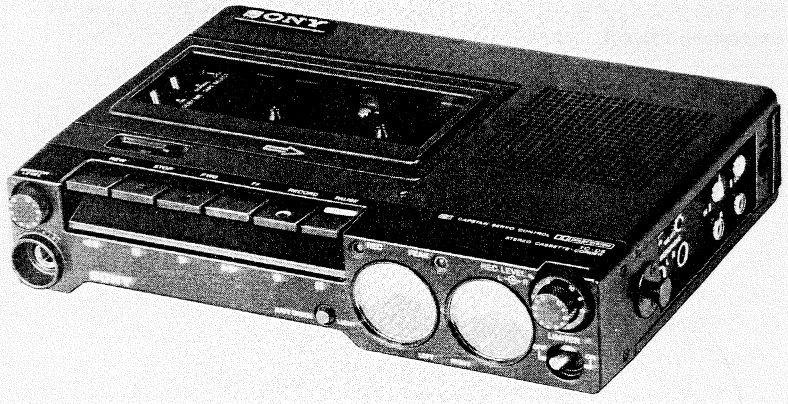
TC-D5

AEP Model
Canadian Model



STEREO CASSETTE-CORDER

SPECIFICATIONS

Power Requirements: 3 V dc, two batteries IEC designation R20 (size D)
External Power Input Jack
required voltage: 6 V dc
usable from 100, 117, 120 V ac with optional AC Power Adaptor AC-12, from 110, 120, 127, 220, 240 V ac with optional AC-122, or from 12 V car battery with optional Sony Car Battery Cord DCC-127A or DCC-130

Battery Life: Approx. 2 hours of continuous recording with Sony Super Batteries SUM-1S or 5.5 hours with Eveready Alkaline Batteries No. E95

Dimensions: Approx. 237 (w) x 48 (h) x 168 (d) mm
9 $\frac{3}{8}$ (w) x 1 $\frac{7}{8}$ (h) x 6 $\frac{5}{8}$ (d) inches

Weight: Approx. 1.7 kg, 3 lb 12 oz
including batteries

Track: 4-track 2-channel stereo

Fast Winding Time: Approx. 150 sec. with Sony Cassette C-60

Frequency Response: DOLBY NR OFF with MICROPHONE inputs

- with Ferri-chrome Cassette
  (TAPE SELECT : Fe-Cr)
  20 – 18,000 Hz (NAB)
  30 – 16,000 Hz ±3 dB (NAB)
  30 – 16,000 Hz (DIN)
- With Chromium Dioxide Cassette
  20 – 16,000 Hz (NAB)
  30 – 15,000 Hz ±3 dB (NAB)
  30 – 15,000 Hz (DIN)
- With standard cassette
  (TAPE SELECT : NORMAL)
  20 – 15,000 Hz (NAB)
  30 – 12,000 Hz (DIN)

Wow and Flutter: 0.06 % (WRMS)
±0.17 % (DIN)

S/N Ratio: DOLBY NR OFF

- With Ferri-chrome Cassette
  (TAPE SELECT : Fe-Cr)
  59 dB at peak level (NAB)
  57 dB (DIN, 1975 rev.)
- With Chromium Dioxide Cassette
  55 dB at peak level (NAB)
- With standard cassette
  (TAPE SELECT : NORMAL)
  53 dB at peak level (NAB)

DOLBY NR ON
Improved by 5 dB at 1 kHz, 10 dB above 5 kHz

Total Harmonic Distortion: 1.3 %

Record Bias Frequency: 85 kHz

— Continued on page 2 —

'Dolby' and the double-D symbol are the trade marks of Dolby Laboratory Inc. Noise reduction system manufactured under license from Dolby Laboratory Inc.

SONY

SERVICE MANUAL

Speaker: Approx. 5 cm (2 inches) dia.

Power Output: 200 mW (at 10 % harmonic distortion)
at dc operation

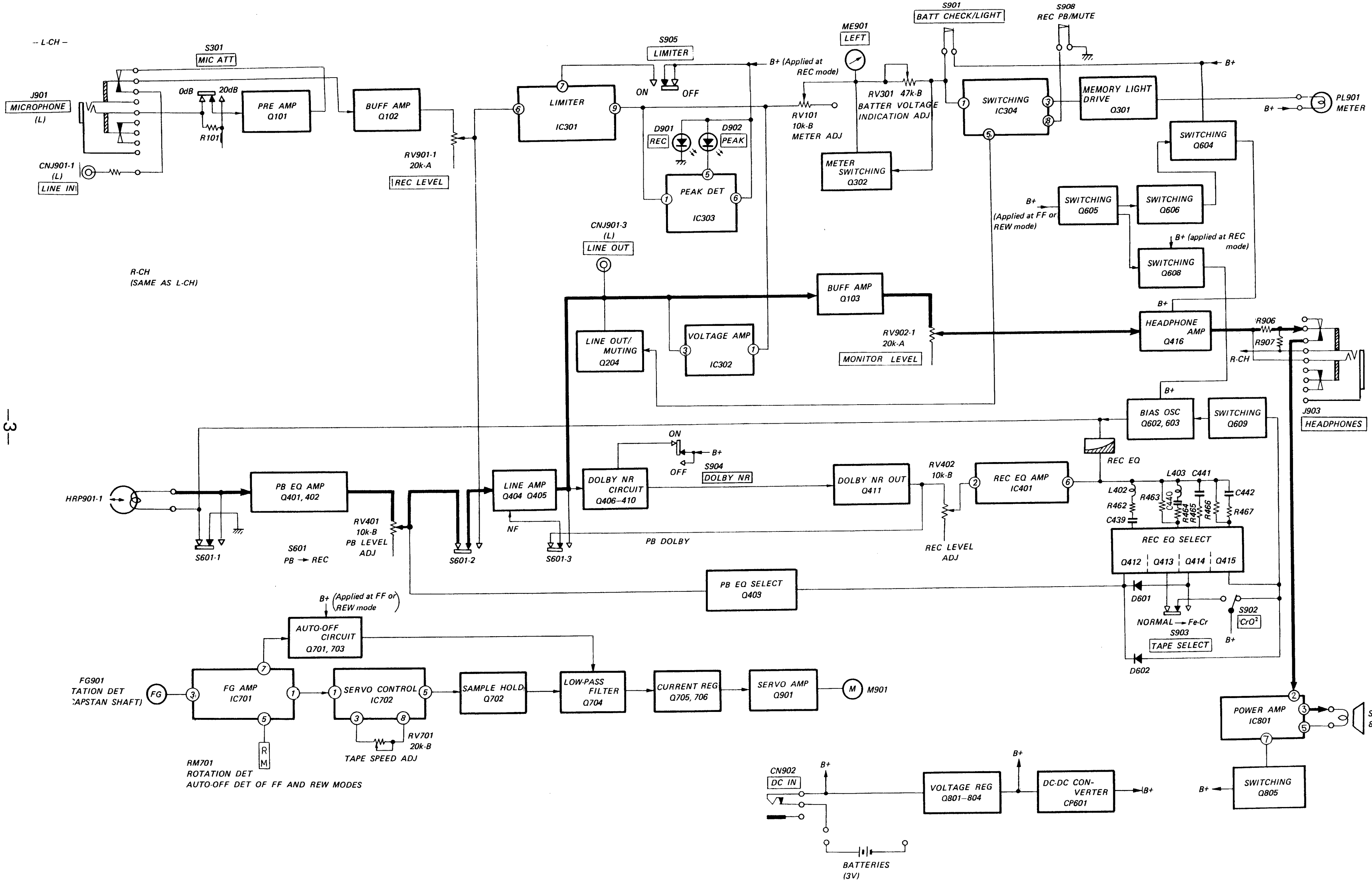
Inputs: Two MICROPHONE input jacks (phone jack)
sensitivity 0.2 mV (−72 dB)
for low impedance microphone
Two LINE IN jacks (phono jack)
sensitivity 0.06 V (−22 dB)
input impedance 100 kΩ

Outputs: Two LINE OUT jacks (phono jack)
load impedance 10 kΩ or higher
rated output 0.435 V (−5 dB) at load impedance 100 kΩ
HEADPHONES jack (stereo binaural jack)
for 8–32 Ω impedance headphones

0 dB = 0.775 V

SECTION 1
OUTLINE

1-1. BLOCK DIAGRAM


-- L-CH --
J901
MICROPHONE
(L)
S301
MIC ATT
0dB
20dB
R101
CNJ901-1
(L)
LINE IN
PRE AMP
Q101
BUFF AMP
Q102
RV901-1
20k-A
REC LEVEL
LIMITER
IC301
S905
LIMITER
ON
OFF
B+ (Applied at REC mode)
D901
REC
D902
PEAK
PEAK DET
IC303
RV101
10k-B
METER ADJ
ME901
LEFT
RV301 47k-B
BATTER VOLTAGE INDICATION ADJ
METER SWITCHING
Q302
S901
BATT CHECK/LIGHT
S908
REC PB/MUTE
SWITCHING
IC304
MEMORY LIGHT DRIVE
Q301
B+
PL901
METER
SWITCHING
Q604
SWITCHING
Q605
(Applied at FF or REW mode)
SWITCHING
Q606
B+ (applied at REC mode)
SWITCHING
Q608
CNJ901-3
(L)
LINE OUT
R-CH
(SAME AS L-CH)
BUFF AMP
Q103
LINE OUT/ MUTING
Q204
VOLTAGE AMP
IC302
RV902-1
20k-A
MONITOR LEVEL
HEADPHONE AMP
Q416
R906
R907
R-CH
J903
HEADPHONES
BIAS OSC
Q602, 603
SWITCHING
Q609
REC EQ
HRP901-1
PB EQ AMP
Q401, 402
S601-1
S601
PB → REC
RV401
10k-B
PB LEVEL ADJ
S601-2
LINE AMP
Q404 Q405
NF
S601-3
DOLBY NR CIRCUIT
Q406-410
ON
OFF
S904
DOLBY NR
PB DOLBY
DOLBY NR OUT
Q411
RV402
10k-B
REC LEVEL ADJ
REC EQ AMP
IC401
L403 C441
L402
C442
R462
R463
C440
R464
R465
R466
R467
C439
REC EQ SELECT
Q412 Q413 Q414 Q415
PB EQ SELECT
Q403
D601
NORMAL → Fe-Cr
S903
TAPE SELECT
S902
CrO²
D602
B+ (Applied at FF or REW mode)
AUTO-OFF CIRCUIT
Q701, 703
FG901
TATION DET
CAPSTAN SHAFT)
FG
FG AMP
IC701
SERVO CONTROL
IC702
SAMPLE HOLD
Q702
LOW-PASS FILTER
Q704
CURRENT REG
Q705, 706
SERVO AMP
Q901
M
M901
RV701
20k-B
TAPE SPEED ADJ
RM701
ROTATION DET
AUTO-OFF DET OF FF AND REW MODES
POWER AMP
IC801
SP901
8Ω
SWITCHING
Q805
CN902
DC IN
BATTERIES
(3V)
VOLTAGE REG
Q801-804
DC-DC CONVERTER
CP601

1-2. MECHANICAL OPERATION

- **Disc Drive System**

An elastic rubber coating is applied to the flywheel and the motor pulley is pressed directly against this rubber coating to drive the flywheel.

The compliance of this elastic materials and the inertial mass of the flywheel together function as a mechanical filter, to eliminate any flutter components above approximately 100Hz.

Motor torque increases in inverse proportion to the reduction ratio between the motor and the flywheel.

Meanwhile, since the inertial mass of the flywheel itself is low, excellent start-up characteristics (The time from start-up to rated speed is less than 0.2 sec) and anti-rolling effect are obtained.

- **Capstan Servo Control Mechanism**

The speed is detected through the flywheel which is directly coupled to the capstan, to apply the servo control.

As shown in Fig. 1-1, the bearing assembly comprises a bias magnet, coil, and stator.

The flywheel has a rotor and the coil senses fluctuations in magnetic flux caused by variations in the air gap between the rotor and the stator, to generate the servo control frequencies.

This serves to remove any wow components from 10Hz down to the vicinity of DC, to improve the anti-rolling effect.

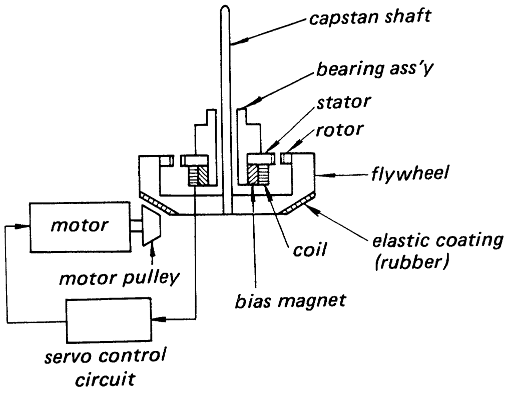
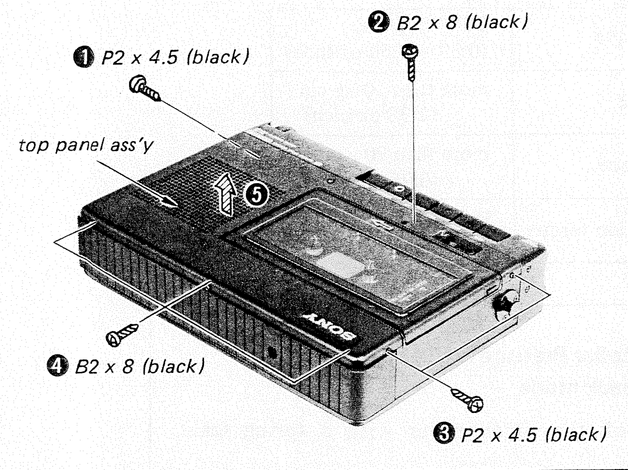

capstan shaft
bearing ass'y
stator
rotor
flywheel
motor
motor pulley
coil
elastic coating (rubber)
bias magnet
servo control circuit

Fig. 1-1

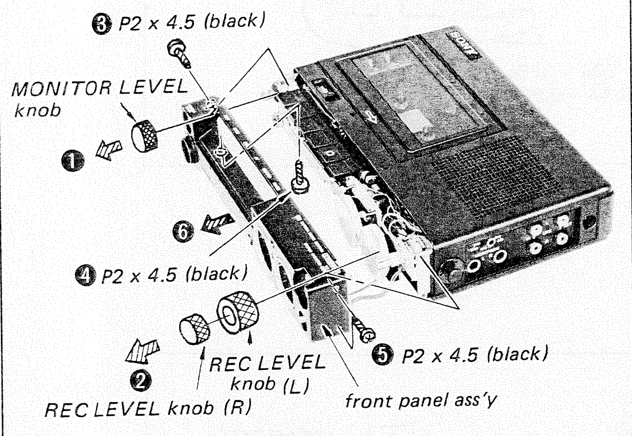
SECTION 2
DISASSEMBLY

- Follow the disassembly procedure in the numerical order given.

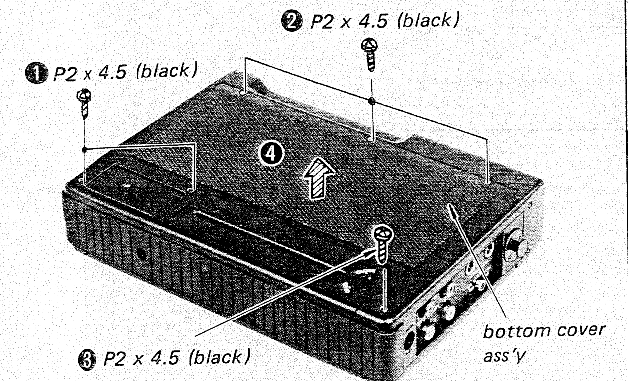
Top Panel Ass'y Removal


❷ B2 x 8 (black)
❶ P2 x 4.5 (black)
top panel ass'y
❺
❹ B2 x 8 (black)
❸ P2 x 4.5 (black)

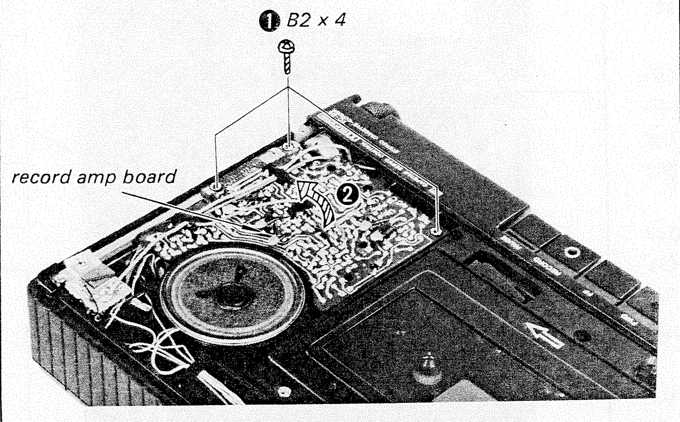
Front Panel Ass'y Removal


❸ P2 x 4.5 (black)
MONITOR LEVEL knob
❶
❻
❹ P2 x 4.5 (black)
❷
REC LEVEL knob (L)
❺ P2 x 4.5 (black)
REC LEVEL knob (R)
front panel ass'y

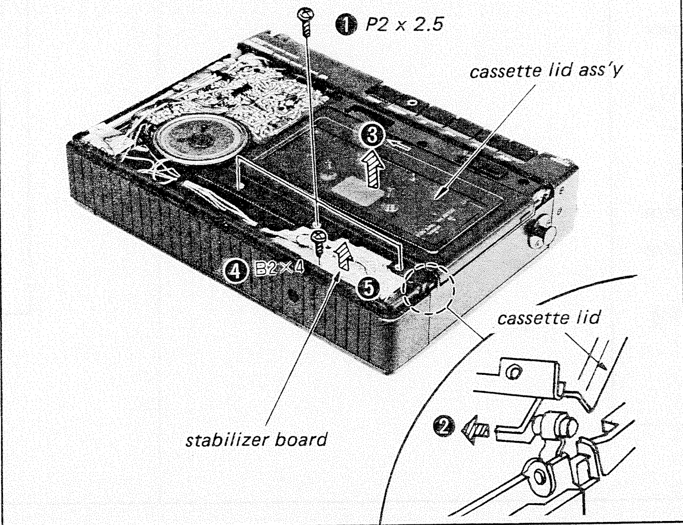
Bottom Cover Ass'y Removal


❷ P2 x 4.5 (black)
❶ P2 x 4.5 (black)
❹
❸ P2 x 4.5 (black)
bottom cover ass'y

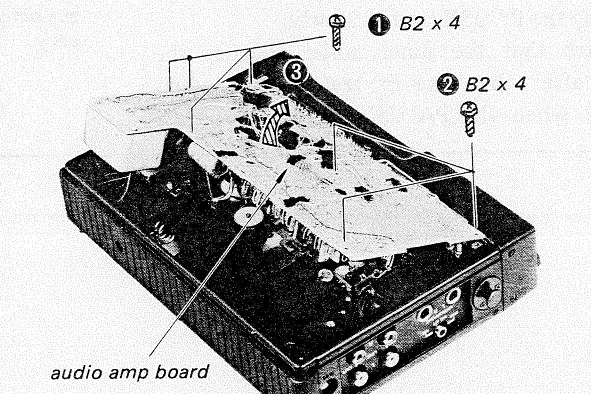
Record Amp Board Removal


❶ B2 x 4
record amp board
❷

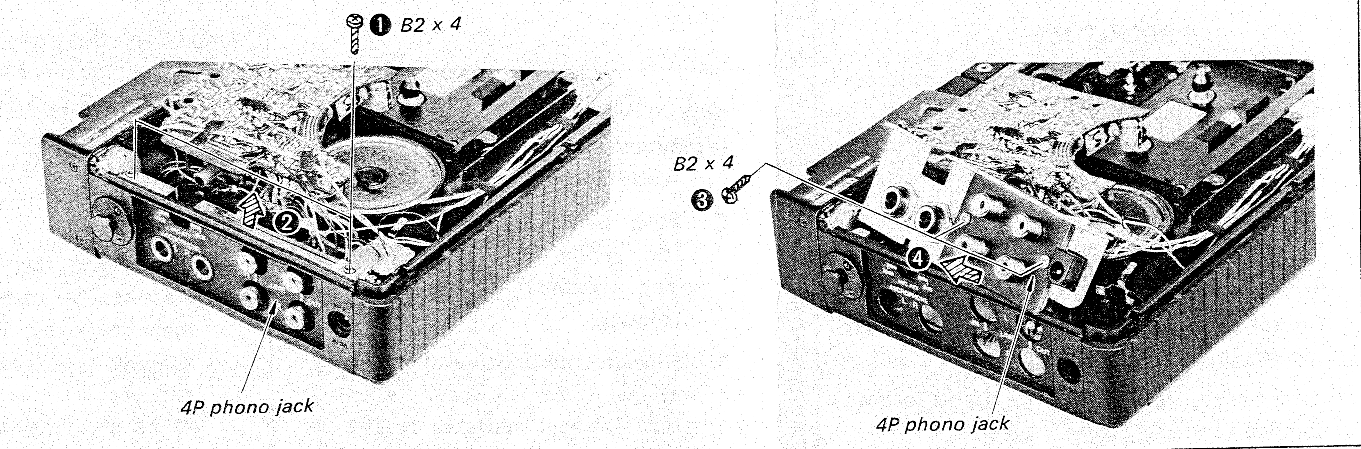
Cassette Lid Ass'y and Stabilizer Board Removal


❶ P2 x 2.5
cassette lid ass'y
❸
❹ B2x4
❺
cassette lid
❷
stabilizer board

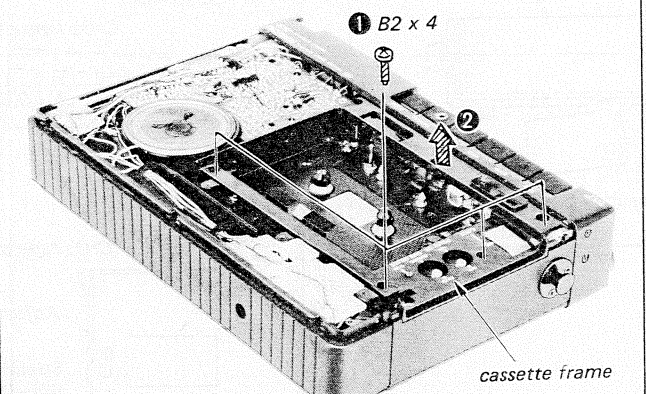
Audio Amp Board Removal


❶ B2 x 4
❸
❷ B2 x 4
audio amp board

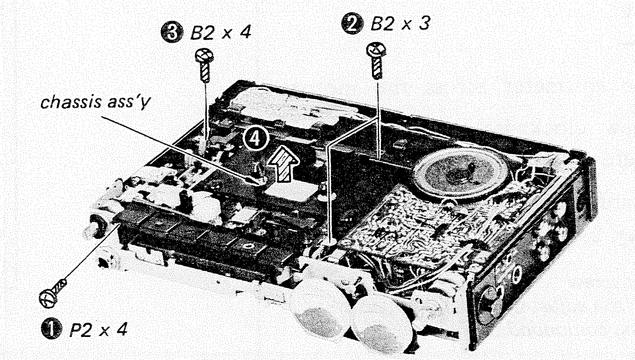
4P Phono Jack Removal


❶ B2 x 4
❷
4P phono jack
B2 x 4
❸
❹
4P phono jack

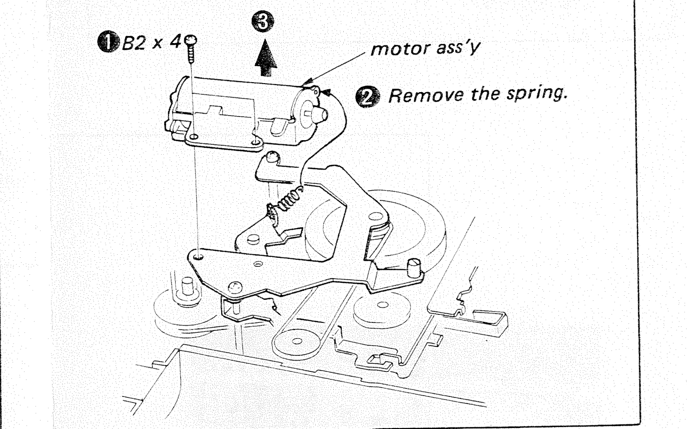
Cassette Frame Removal


❶ B2 x 4
❷
cassette frame

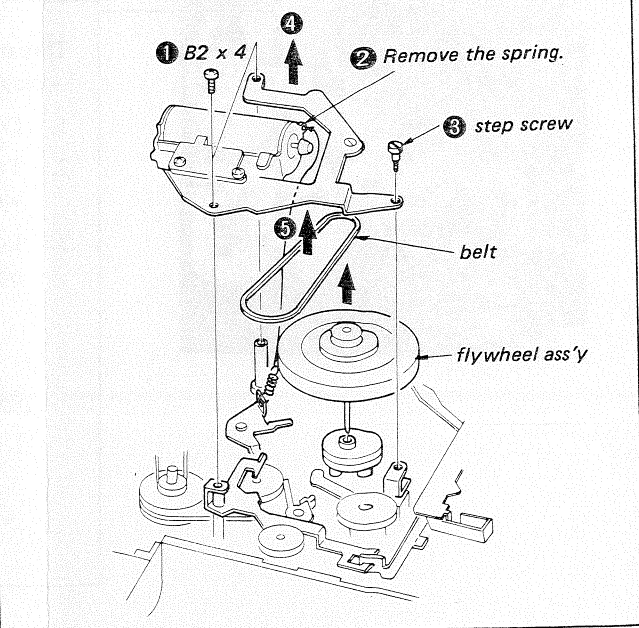
Chassis Removal


❸ B2 x 4
❷ B2 x 3
chassis ass'y
❹
❶ P2 x 4

Motor Ass'y Removal


❶ B2 x 4
❸
motor ass'y
❷ Remove the spring.

Flywheel Ass'y Removal


❶ B2 x 4
❹
❷ Remove the spring.
❸ step screw
❺
belt
flywheel ass'y

SECTION 3
ADJUSTMENTS

3-1. MECHANICAL ADJUSTMENTS

PRECAUTION

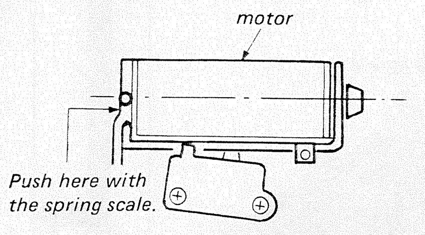
1. Clean the following parts with a denatured-alcohol-moistened swab:

record/playback head	pinch roller
erase head	rubber belts
capstan	idlers

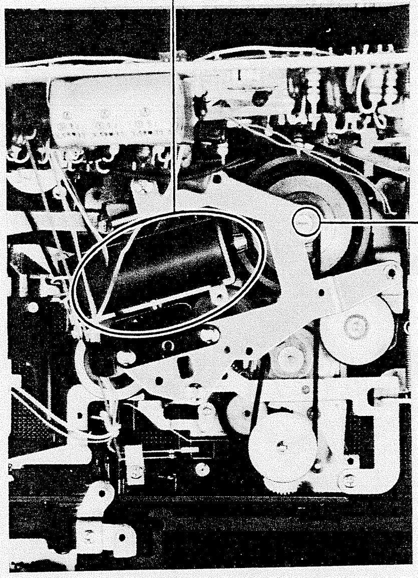
2. Demagnetize the rocrd/playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

Motor Pressure Measurement
– playback mode –

1. Place the set vertically.
2. Push the end of motor with the spring scale as shown. The flywheel will not stop rotating.
3. Measure the pressure of motor against the flywheel when the flywheel starts to rotate, while returning the spring scale slowly.

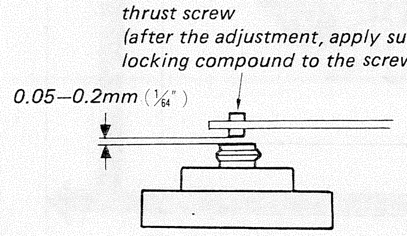

motor
Push here with the spring scale.

Specification: 50–90g (1.76–3.17 oz)



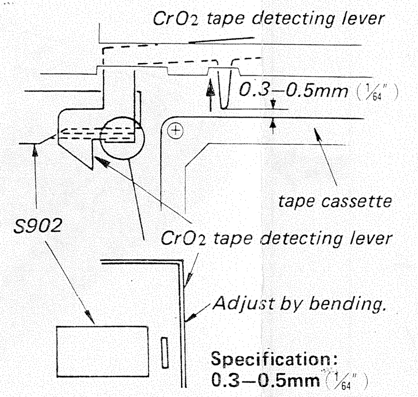
Thrust Adjustment
– playback mode –

1. Connect a dc voltmeter across the motor.
2. Turn the screw clockwise for the position where the meter reading suddenly increases.
3. Loosen the screw ¼ turn from the position obtained in step 2.

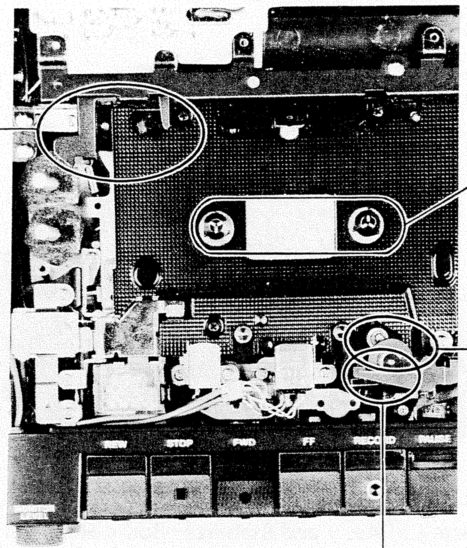

thrust screw
(after the adjustment, apply suitable locking compound to the screw.)
0.05–0.2mm (1/64")

CrO$_2$ Tape Detecting Lever Adjustment – stop mode –

1. Insert the tape cassette (except for CrO$_2$ tape) into the set.
2. Push the CrO$_2$ tape detecting lever in the direction of the arrow.
   Make sure that the clearance between the cassette and CrO$_2$ tape detecting lever is 0.3–0.5mm (1/64"). If necessary, bend the lever.
3. Make sure that the miniature switch (S902) is turned off when returning the CrO$_2$ tape detecting lever to the original position.


CrO2 tape detecting lever
0.3–0.5mm (1/64")
tape cassette
S902
CrO2 tape detecting lever
Adjust by bending.

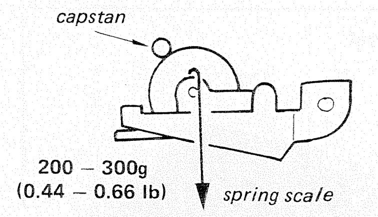
Specification: 0.3–0.5mm (1/64")



Torque Measurement	
FWD torque	28 – 48 g·cm (0.39 – 0.66 oz·inch)
FF torque	more than 100 g·cm (1.38 oz·inch)
REW torque	more than 70 g·cm (0.96 oz·inch)
Back-tension torque	less than 5 g·cm (0.07 oz·inch)

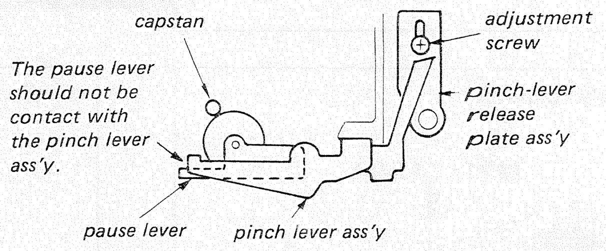
Pinch Roller Pressure Adjustment
– playback mode –

1. Hook the pinch roller with a spring scale.
2. Pull the spring scale.
3. Slowly return the pinch roller and read the spring scale as soon as the pinch roller starts to rotate.


capstan
200 – 300g
(0.44 – 0.66 lb)
spring scale

Pause Timing Adjustment
– playback mode –

1. Adjust the position of pinch-lever release plate ass'y so that the pinch roller and the take-up reel spindle stop rotating at the same time when depressing the PAUSE button slowly.
2. Make sure that the pinch roller touches the capstan after the take-up reel spindle starts to rotate when the PAUSE button is released.


capstan
The pause lever should not be contact with the pinch lever ass'y.
adjustment screw
pinch-lever release plate ass'y
pause lever
pinch lever ass'y

3-2. ELECTRICAL ADJUSTMENTS

Note: The adjustment should be performed in the order given in this service manual. The adjustments should be performed for both L-CH and R-CH.

Test Equipment/Tools Required:

audio oscillator (af osc)
VTVM
digital frequency counter
speed checker SONY LFM-30
oscilloscope
attenuator (600Ω)
non-magnetic screwdriver
resistors ... 300Ω (¼W), 10kΩ (¼W),
100kΩ (¼W)
blank tapes (completely erased with bulk eraser)
SONY CS-10 (HF), CS-20 (CrO_2),
CS-30 (Fe-Cr)

Set the TAPE SELECT switch in accordance with the tape used as follows.

Tape	TAPE SELECT switch
CS-10	NORMAL
CS-20	CrO_2
CS-30	Fe-Cr

SONY test tapes

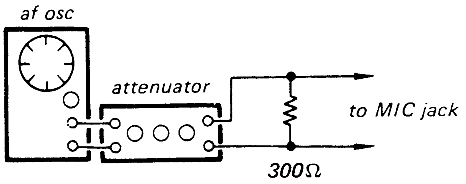
P-4-A81S	(6.3kHz, −10dB)
P-4-L81	(333Hz, 0dB)
WS-48	(3kHz, 0dB)

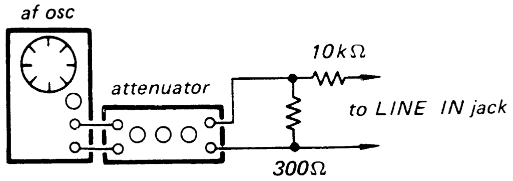
Switches and controls should be set as follows unless otherwise specified.

DOLBY NR switch:	OFF
TAPE SELECT switch:	NORMAL
LIMITER switch:	OFF
MIC ATT switch:	0 dB

Test Equipment Connections:

Input side:





Standard Record:

Deliver the standard input signal level to the input jack and set the REC LEVEL control to obtain the standard output signal level.

Standard Input Level

	MIC	LINE IN
source impedance	300Ω	10kΩ
input level	0.77mV (−60dB)	0.25V (−10dB)

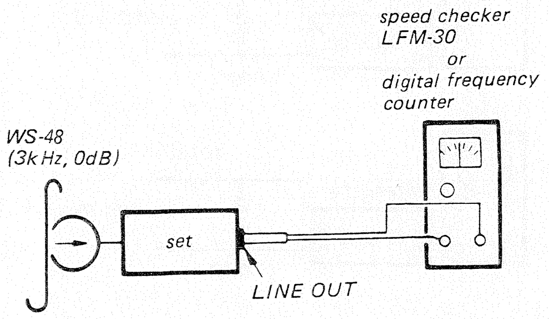
Standard Output Level

	LINE OUT
load impedance	100kΩ
output level	0.44V (−5dB)

Tape Speed Adjustment

Procedure:

Mode: Playback


speed checker
LFM-30
or
digital frequency
counter
WS-48
(3kHz, 0dB)
set
LINE OUT

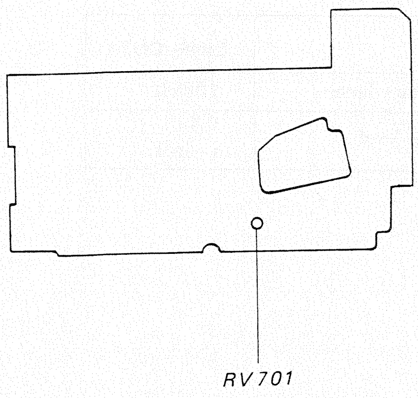
Adjust RV701 to obtain the specified values below.

Specification:

Speed checker	Digital frequency counter
−1.0 ～ +1.0%	2,970 ～ 3,030Hz

Adjustment Location:

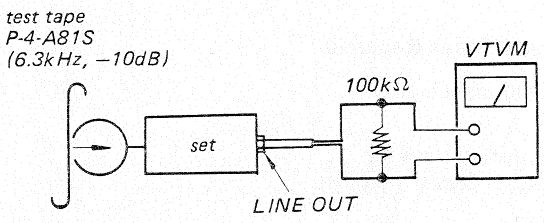
– audio amp board (conductor side) –



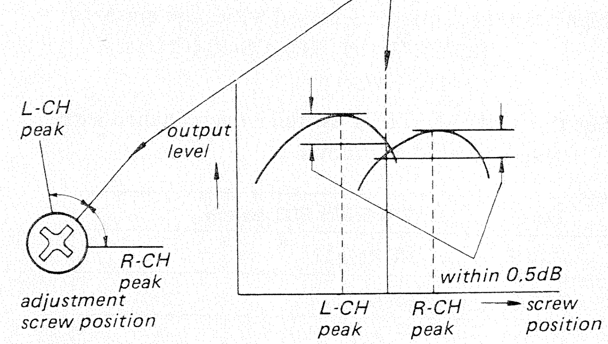
Record/playback Head Azimuth Adjustment

Procedure:

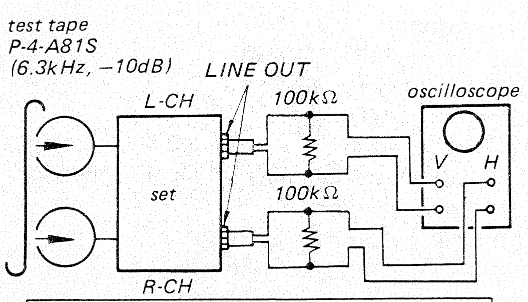
1. Mode: Playback

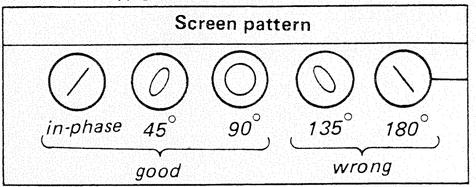

test tape
P-4-A81S
(6.3kHz, −10dB)
VTVM
100kΩ
set
LINE OUT

2. Turn the adjustment screw for maximum level and set it to the mechanical mid position between L-CH and R-CH peak positions.

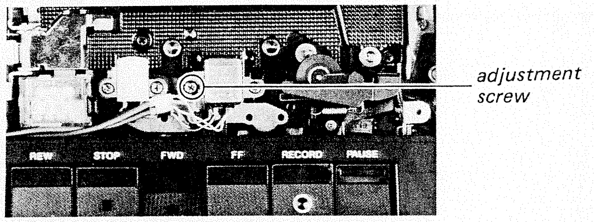

L-CH
peak
output
level
R-CH
peak
adjustment
screw position
within 0.5dB
L-CH
peak
R-CH
peak
screw
position

3. Mode: Playback


test tape
P-4-A81S
(6.3kHz, −10dB)
LINE OUT
L-CH
100kΩ
oscilloscope
V
H
set
100kΩ
R-CH


Screen pattern
in-phase
45°
90°
135°
180°
good
wrong

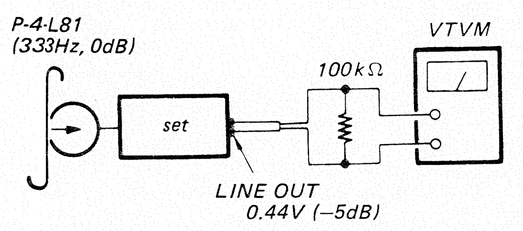
Adjustment Location:


REW
STOP
FWD
FF
RECORD
PAUSE
adjustment
screw

Playback Level Adjustment

Procedure:

1. Mode: Playback


P-4-L81
(333Hz, 0dB)
VTVM
100kΩ
set
LINE OUT
0.44V (−5dB)

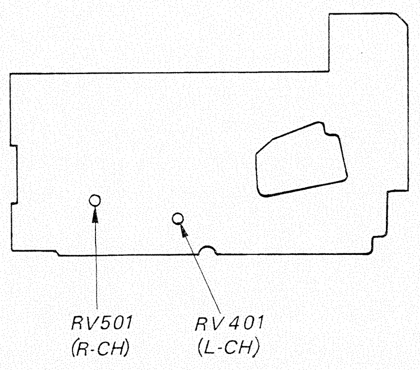
2. Adjust RV401 (L-CH) and RV501 (R-CH) to obtain 0.56V (−3dB) VTVM reading.
3. Make sure that the LINE OUT level does not change when the mode is changed from playback to stop several times.

Specification:

LINE OUT level:	0.52 − 0.58V (−3.5 to −2.5dB)

Adjustment Location:

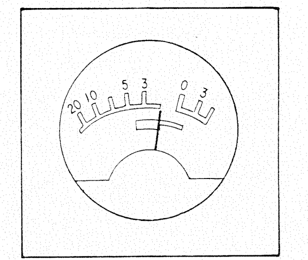
– *audio amp board (conductor side)* –


RV501
(R-CH)
RV401
(L-CH)

Battery Indication Meter Adjustment

Procedure:

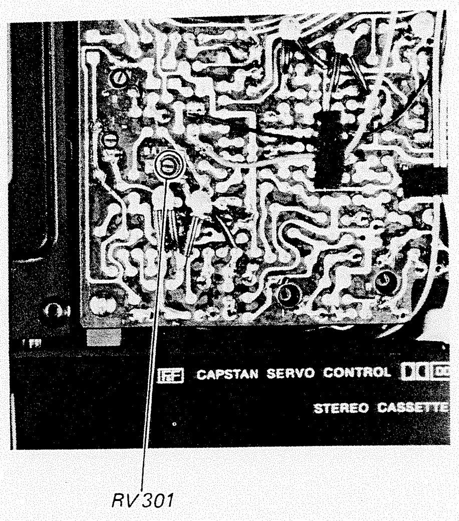
1. Mode: Playback (with no cassette installed)
2. Feed 2.2V dc to DC IN 6V jack.
3. When the BATT CHECK/LIGHT button is pushed, adjust RV301 so that the meter indicates the position as shown below.



level meter

Adjustment Location:

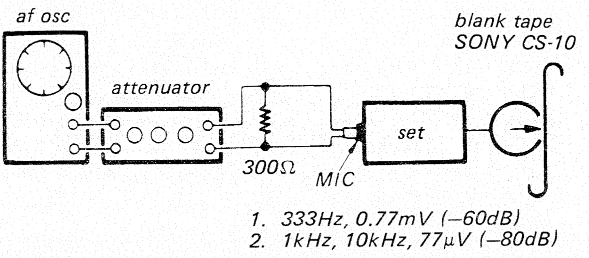
– *record amp board* –


CAPSTAN SERVO CONTROL
STEREO CASSETTE
RV301

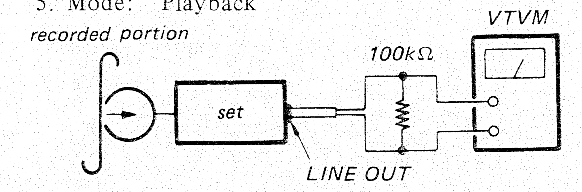
Record Bias Adjustment

Procedure:

1. Mode: Record
   TAPE SELECT switch: NORMAL
   LIMITER switch: OFF


af osc
attenuator
300Ω
MIC
set
blank tape
SONY CS-10
1. 333Hz, 0.77mV (−60dB)
2. 1kHz, 10kHz, 77μV (−80dB)

2. Feed a signal of 333Hz, 0.77mV (−60dB) into the MIC jack.
3. Adjust the REC LEVEL control for −5dB (0.44V) on the VTVM.
4. Feed the signals of 1kHz and 10kHz, 77μV (−80dB) into the MIC jack.
5. Mode: Playback


recorded portion
VTVM
100kΩ
set
LINE OUT

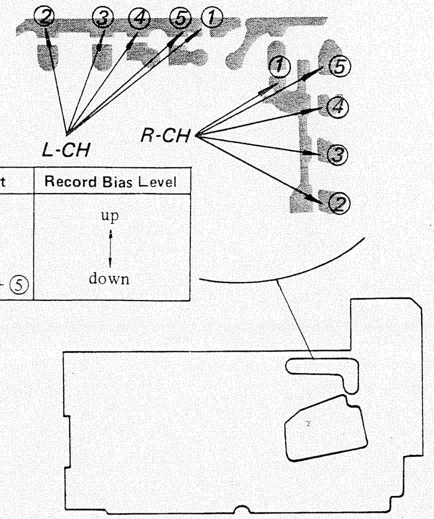
6. Play back the signals of 1kHz and 10kHz, and connect the pattern by soldering for specified values. If necessary, connect the two or more patterns.

Specification:

±0.5dB or less (10kHz level deviation from 1kHz)

Adjustment Location:

– *audio amp board (conductor side)* –

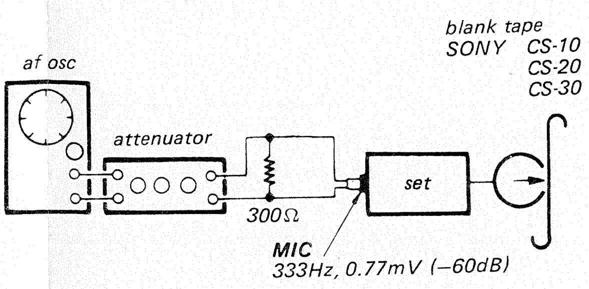

② ③ ④ ⑤ ①
① ⑤ ④ ③ ②
L-CH
R-CH

Connecting Point	Record Bias Level
① ② ⋮ ①+②+③+④+⑤	up ↕ down

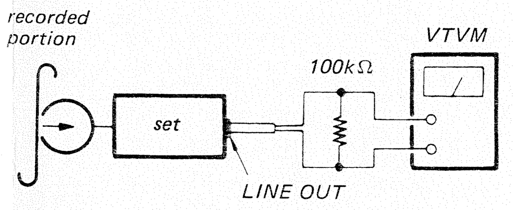
Record Level Adjustment

Procedure:

1. Mode: Standard record (See page 9)
   MIC ATT switch: 0dB
   LIMITER switch: OFF


af osc
attenuator
300Ω
set
blank tape
SONY CS-10
CS-20
CS-30
MIC
333Hz, 0.77mV (−60dB)

2. Mode: Playback


recorded portion
VTVM
100kΩ
set
LINE OUT

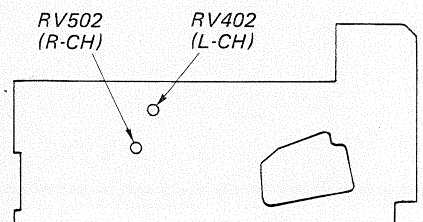
3. Adjust RV402 (L-CH) and RV502 (R-CH) to obtain the specified VTVM reading.

Specification:

Tape	TAPE SELECT switch	LINE OUT level
CS-10	NORMAL	0.40 − 0.45V (−6.0 to −5.0dB)
CS-20	automatically changed to CrO2 position.	0.31 − 0.50V (−8.0 to −4.0dB)
CS-30	Fe-Cr	

Adjustment Location:

– *audio amp board (Conductor Side)* –


RV502
(R-CH)
RV402
(L-CH)

Leve

Proc

1

2

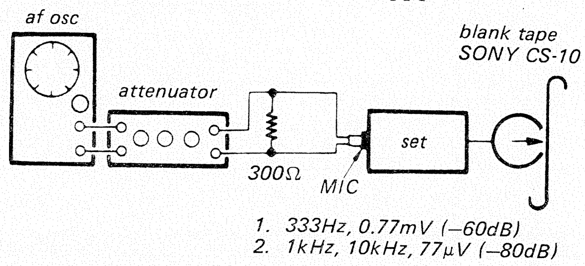
3

Adj

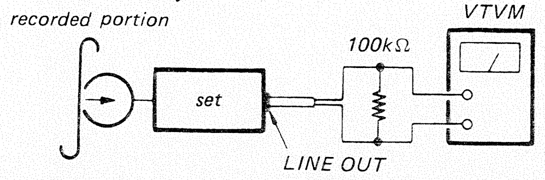
Record Bias Adjustment

Procedure:

1. Mode: Record
   TAPE SELECT switch: NORMAL
   LIMITER switch: OFF


af osc
attenuator
300Ω
MIC
set
blank tape
SONY CS-10
1. 333Hz, 0.77mV (−60dB)
2. 1kHz, 10kHz, 77μV (−80dB)

2. Feed a signal of 333Hz, 0.77mV (−60dB) into the MIC jack.
3. Adjust the REC LEVEL control for −5dB (0.44V) on the VTVM.
4. Feed the signals of 1kHz and 10kHz, 77μV (−80dB) into the MIC jack.
5. Mode: Playback


recorded portion
set
100kΩ
VTVM
LINE OUT

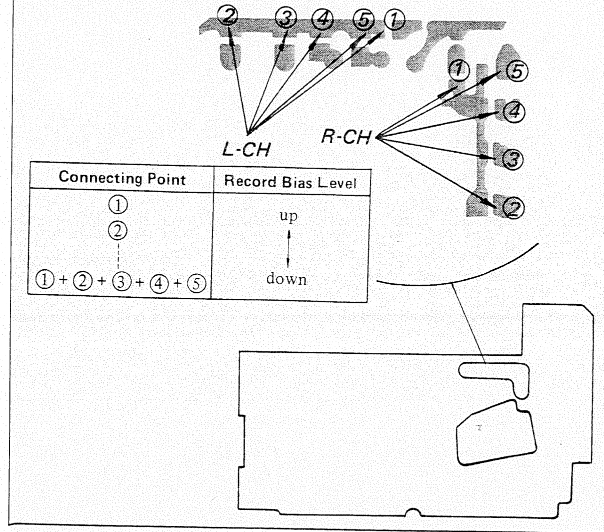
6. Play back the signals of 1kHz and 10kHz, and connect the pattern by soldering for specified values. If necessary, connect the two or more patterns.

Specification:

±0.5dB or less (10kHz level deviation from 1kHz)

Adjustment Location:

– *audio amp board (conductor side)* –

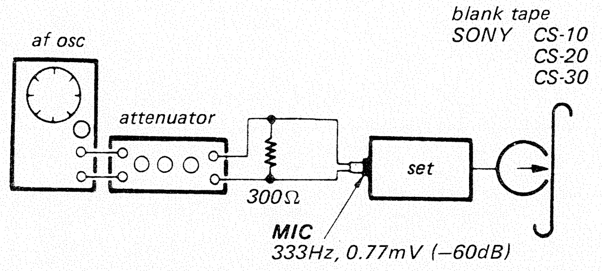

②
③
④
⑤
①
L-CH
①
⑤
④
③
②
R-CH

Connecting Point	Record Bias Level
① ② ⋮ ①+②+③+④+⑤	up ↕ down

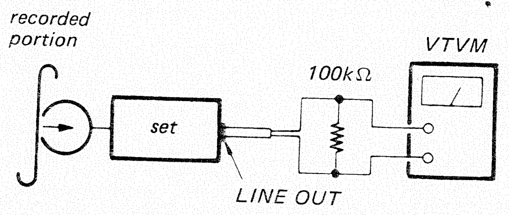
Record Level Adjustment

Procedure:

1. Mode: Standard record (See page 9)
   MIC ATT switch: 0dB
   LIMITER switch: OFF


af osc
attenuator
300Ω
set
blank tape
SONY CS-10
CS-20
CS-30
MIC
333Hz, 0.77mV (−60dB)

2. Mode: Playback


recorded portion
set
100kΩ
VTVM
LINE OUT

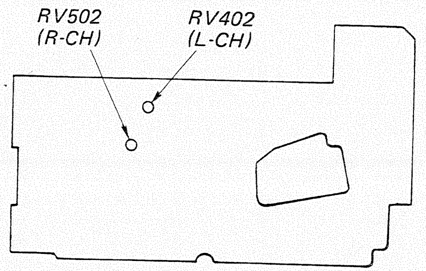
3. Adjust RV402 (L-CH) and RV502 (R-CH) to obtain the specified VTVM reading.

Specification:

Tape	TAPE SELECT switch	LINE OUT level
CS-10	NORMAL	0.40 – 0.45V (−6.0 to −5.0dB)
CS-20	automatically changed to CrO2 position.	0.31 – 0.50V (−8.0 to −4.0dB)
CS-30	Fe-Cr	

Adjustment Location:

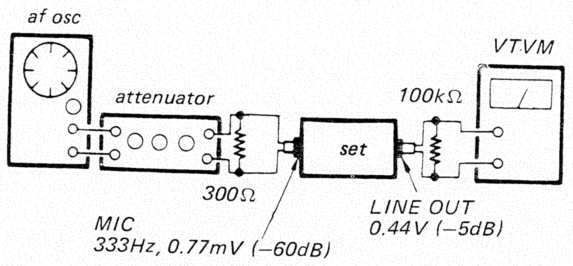
– *audio amp board (Conductor Side)* –


RV502 (R-CH)
RV402 (L-CH)

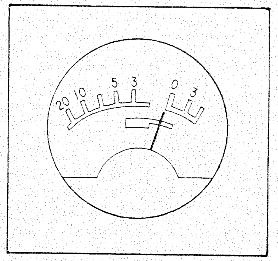
Level Meter Calibration

Procedure:

1. Mode: Standard record (See page 9.)
   MIC ATT switch: 0dB
   LIMITER switch: OFF


af osc
attenuator
300Ω
set
100kΩ
VTVM
MIC
333Hz, 0.77mV (−60dB)
LINE OUT
0.44V (−5dB)

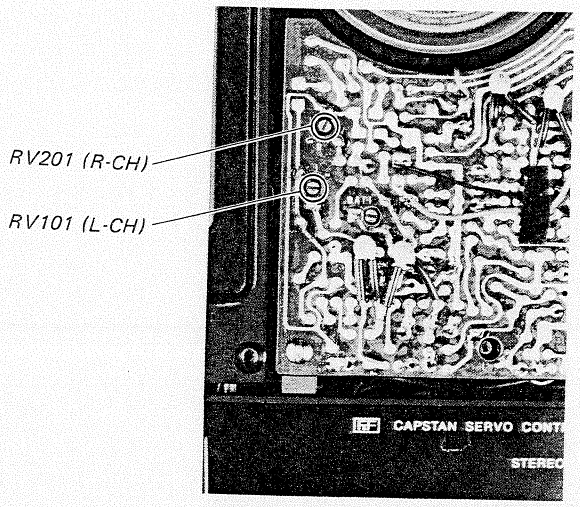
2. Make sure that the VTVM reads 0.44V (−5dB).
3. Adjust RV101 (L-CH) and RV201 (R-CH) for specified reading on the level meter.



level meter

Adjustment Location:

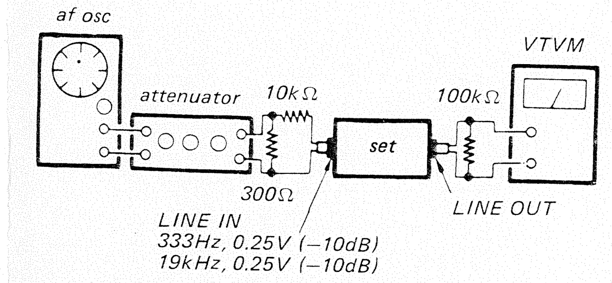
– *record amp board* –


RV201 (R-CH)
RV101 (L-CH)
CAPSTAN SERVO CONT
STEREO

MPX Filter Adjustment

Procedure:

1. Mode: Record
2. Feed a signal of 333Hz, 0.25V (−10dB) into the LINE IN jack.
3. Adjust the REC LEVEL control for −5dB (0.44V) on the VTVM.
4. Feed a signal of 19kHz, 0.25V (−10dB) into the LINE IN jack.
5. Adjust L102 (L-CH) and L202 (R-CH) for minimum reading on the VTVM.

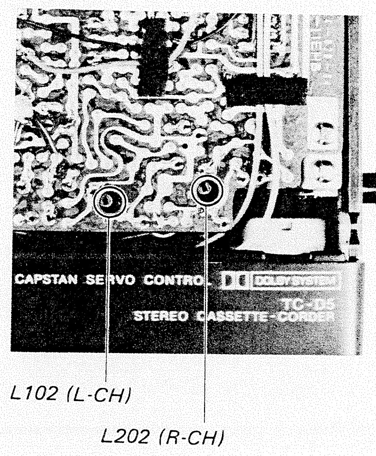

af osc
attenuator
10kΩ
300Ω
set
100kΩ
VTVM
LINE OUT
LINE IN
333Hz, 0.25V (−10dB)
19kHz, 0.25V (−10dB)

Specification:

23dB or more (level difference between 333Hz and 19kHz)

Adjustment Location:

– *record amp board* –

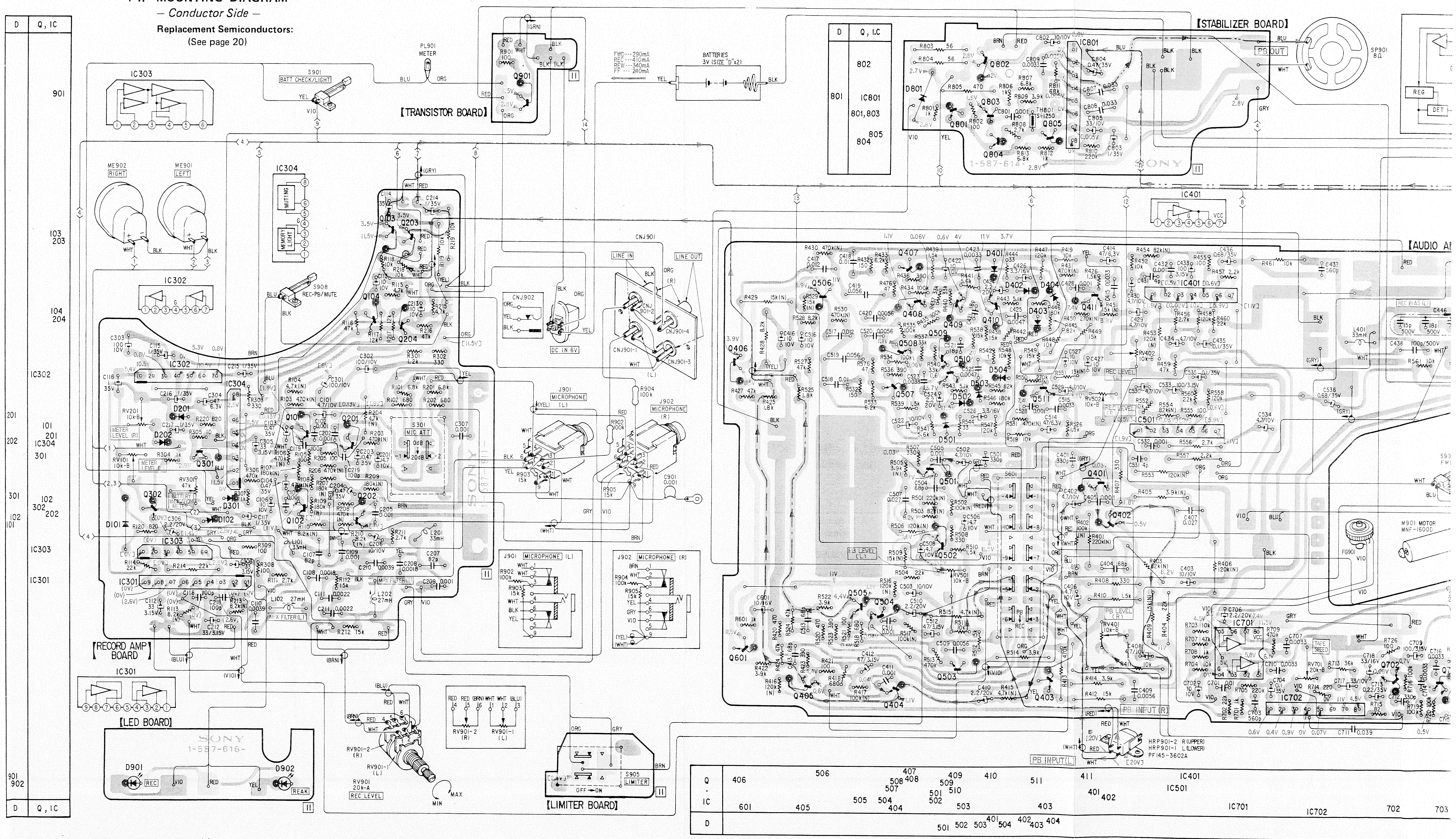

CAPSTAN SERVO CONTROL
STEREO CASSETTE-CORDER
TC-D5
L102 (L-CH)
L202 (R-CH)

SECTION 4
DIAGRAMS

4-1. MOUNTING DIAGRAM

– Conductor Side –

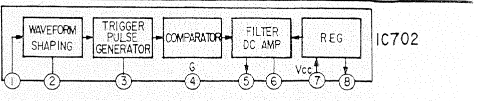
Replacement Semiconductors:
(See page 20)

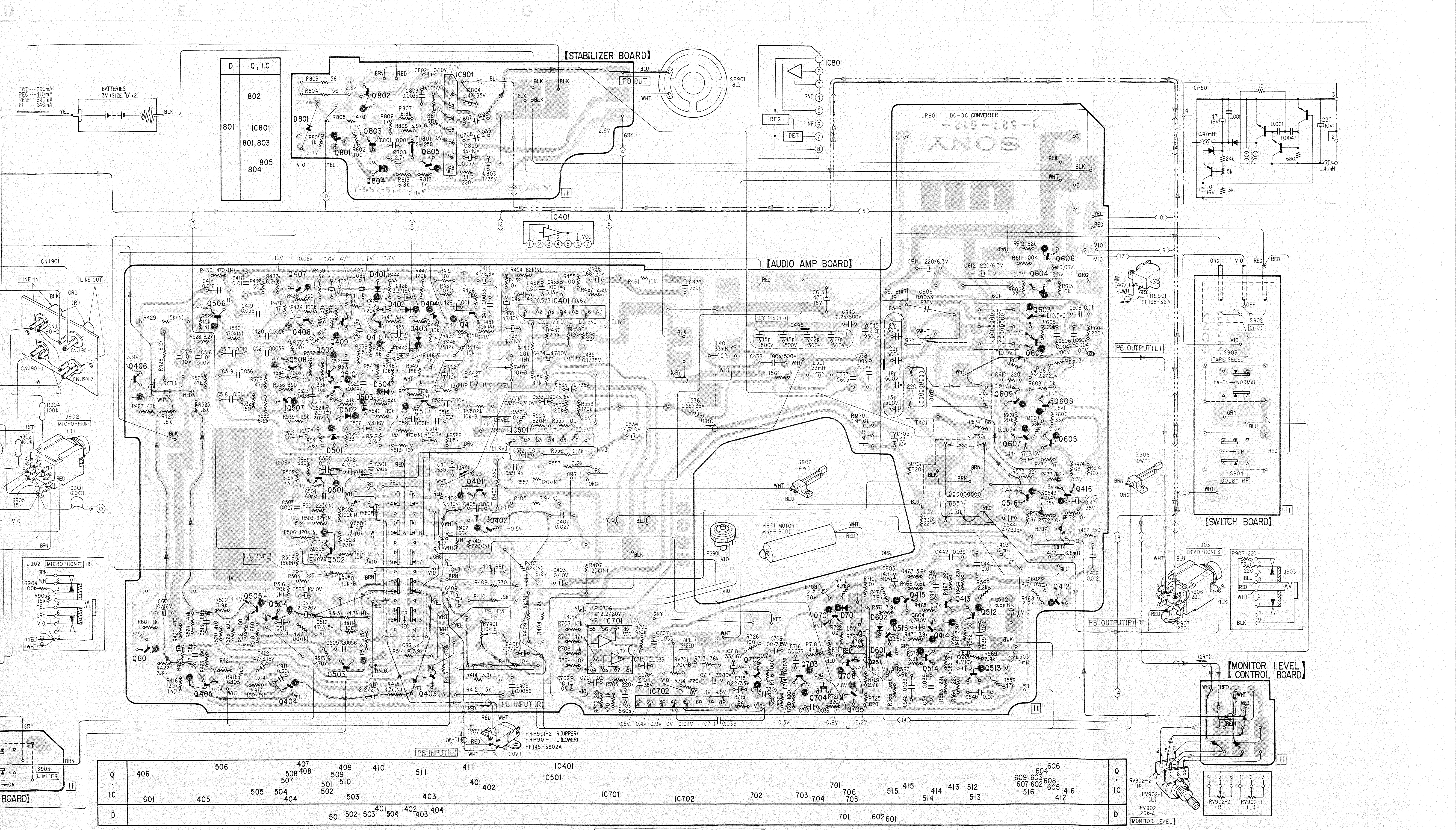

[TRANSISTOR BOARD]
[STABILIZER BOARD]
[RECORD AMP BOARD]
[LED BOARD]
[LIMITER BOARD]
[AUDIO AMP
BATTERIES 3V (SIZE "D"×2)
FWD---290mA
REC---410mA
REW---340mA
FF---240mA
S901 BATT CHECK/LIGHT
PL901 METER
ME902 RIGHT
ME901 LEFT
S908 REC-PB/MUTE
CNJ901 LINE IN LINE OUT
CNJ902 DC IN 6V
J901 MICROPHONE (L)
J902 MICROPHONE (R)
S301 MIC ATT
RV901 20k-A REC LEVEL
MIN MAX
S905 LIMITER OFF→ON
SP901 8Ω
M901 MOTOR MNF-16000
HRP901-2 R(UPPER)
HRP901-1 L(LOWER)
PF45-3602A
PB INPUT(L)
PB INPUT(R)
IC301 IC302 IC303 IC304 IC401 IC501 IC701 IC702 IC801
D
Q, IC

Note: ■ : parts mounted on the conductor side.
▨ : B+ pattern.
– – – → : L-CH playback signal path
— - — → : R-CH playback signal path
▩ : Measured by using a VTVM
[ ] : in record mode

( ) : in FF or REW mode
¦ ¦ : When S905 (LIMITER) is set to ON in record mode.
(( )) : When S902 (CrO2) is off and S903 (TAPE SELECT) is set to Fr-O2 in record mode.
no mark: in playback mode
The total current is taken with no cassette installed.

- DC resistance measurements are with coils and transformers connected on the circuit board, and are approximate.

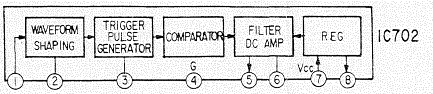

WAVEFORM SHAPING
TRIGGER PULSE GENERATOR
COMPARATOR
FILTER DC AMP
REG
IC702
G
Vcc
1 2 3 4 5 6 7 8


D E F G H I J K
【STABILIZER BOARD】
【AUDIO AMP BOARD】
【SWITCH BOARD】
【MONITOR LEVEL CONTROL BOARD】
BATTERIES 3V (SIZE "D"×2)
FWD---290mA
REC---410mA
REW---340mA
FF---240mA
SP901 8Ω
PB OUT
IC801
IC401
IC501
IC701
IC702
CP601 DC-DC CONVERTER 1-587-612-
SONY
1-587-614-
LINE IN
LINE OUT
CNJ901
J902 MICROPHONE (R)
J902 MICROPHONE (L)
J903 HEADPHONES
S907 FWD
S906 POWER
S902 Cr O2
S903 TAPE SELECT
Fe-Cr NORMAL
S904 DOLBY NR
S905 LIMITER
M901 MOTOR MNF-1600D
FG901
HE901 EF168-36A
HRP901-2 R (UPPER)
HRP901-1 L (LOWER)
PF145-3602A
PB INPUT (L)
PB INPUT (R)
PB OUTPUT (L)
PB OUTPUT (R)
REC LEVEL
REC BIAS (L)
REC BIAS (R)
TAPE SPEED
RV902 20k-A MONITOR LEVEL
RV902-2 (R)
RV902-1 (L)

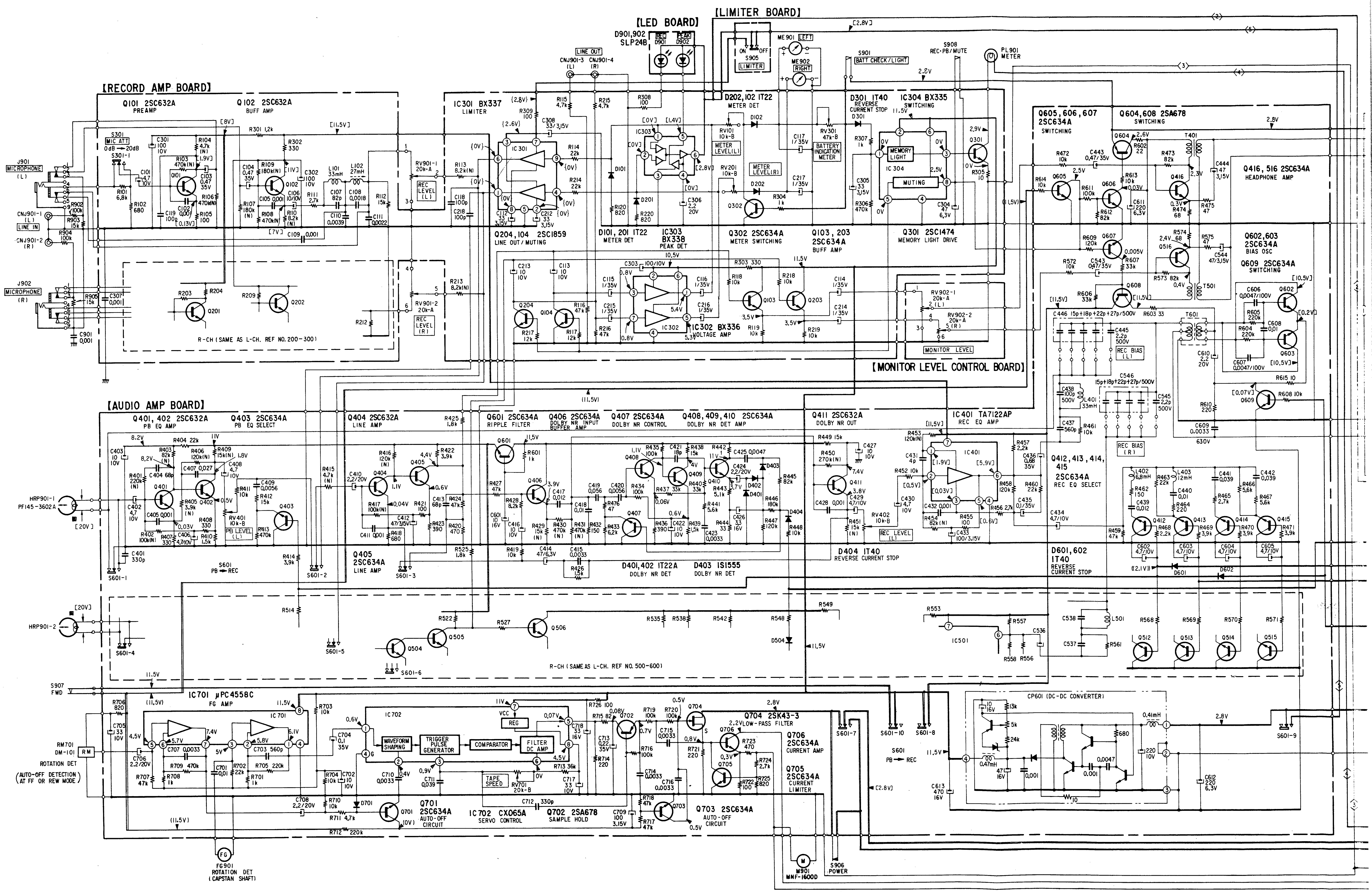
D	Q, IC
	802
801	IC801 801, 803
	805 804

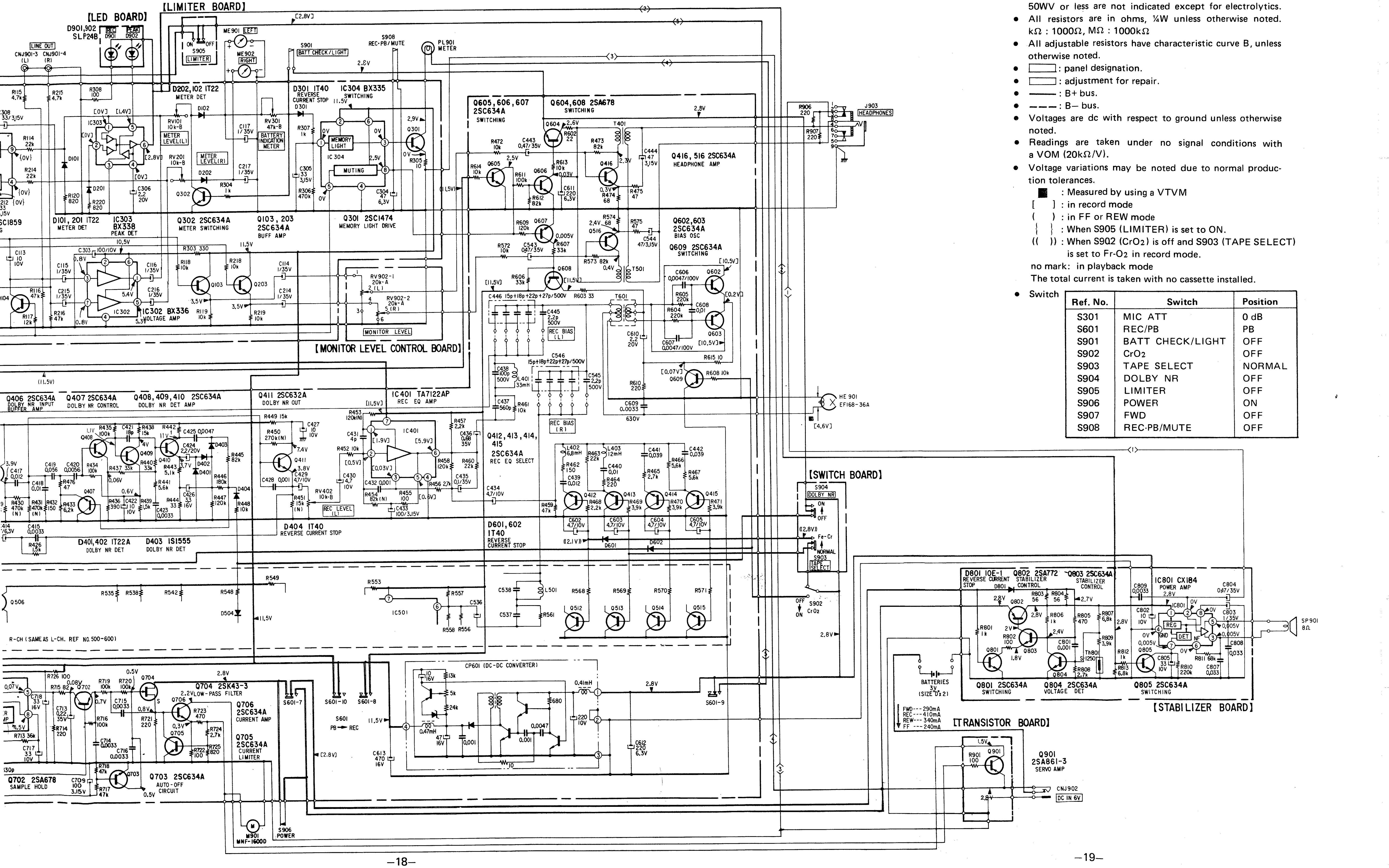
Q	406 506 407 408 508 507 409 509 510 501 410 511 411 401 402 IC401 IC501 701 706 705 515 415 414 514 413 512 513 609 603 604 606 607 602 608 616 605 416 412
IC	601 405 505 504 404 502 503 403 IC701 IC702 702 703 704
D	501 502 503 401 504 402 403 404 701 602 601

- DC resistance measurements are with coils and transformers connected on the circuit board, and are approximate.


WAVEFORM SHAPING
TRIGGER PULSE GENERATOR
COMPARATOR
FILTER DC AMP
REG
IC702
G
Vcc
1 2 3 4 5 6 7 8

4-2. SCHEMATIC DIAGRAM


[RECORD AMP BOARD]
Q101 2SC632A PREAMP
Q102 2SC632A BUFF AMP
S301 MIC ATT 0dB — 20dB S301-1
J901 MICROPHONE (L)
J902 MICROPHONE (R)
CNJ901-1 (L) LINE IN
CNJ901-2 (R)
R-CH (SAME AS L-CH. REF NO. 200-300)
RV901-1 20k-A REC LEVEL (L)
RV901-2 20k-A REC LEVEL (R)
[LED BOARD]
D901,902 SLP24B
REC D901
PEAK D902
LINE OUT CNJ901-3 (L) CNJ901-4 (R)
[LIMITER BOARD]
S905 LIMITER ON OFF
ME901 LEFT
ME902 RIGHT
S901 BATT CHECK/LIGHT
S908 REC·PB/MUTE
PL901 METER
IC301 BX337 LIMITER
Q204,104 2SC1859 LINE OUT/MUTING
D101,201 1T22 METER DET
IC303 BX338 PEAK DET
D202,102 1T22 METER DET
RV101 10k-B METER LEVEL(L)
RV201 10k-B METER LEVEL(R)
RV301 47k-B BATTERY INDICATION METER
IC302 BX336 VOLTAGE AMP
Q302 2SC634A METER SWITCHING
Q103,203 2SC634A BUFF AMP
D301 1T40 REVERSE CURRENT STOP
IC304 BX335 SWITCHING
MEMORY LIGHT
MUTING
Q301 2SC1474 MEMORY LIGHT DRIVE
RV902-1 20k-A 2 (L)
RV902-2 20k-A 5 (R)
MONITOR LEVEL
[MONITOR LEVEL CONTROL BOARD]
Q605,606,607 2SC634A SWITCHING
Q604,608 2SA678 SWITCHING
Q416,516 2SC634A HEADPHONE AMP
Q602,603 2SC634A BIAS OSC
Q609 2SC634A SWITCHING
REC BIAS (L)
REC BIAS (R)
[AUDIO AMP BOARD]
Q401,402 2SC632A PB EQ AMP
Q403 2SC634A PB EQ SELECT
Q404 2SC632A LINE AMP
Q405 2SC634A LINE AMP
Q601 2SC634A RIPPLE FILTER
Q406 2SC634A DOLBY NR INPUT BUFFER AMP
Q407 2SC634A DOLBY NR CONTROL
Q408,409,410 2SC634A DOLBY NR DET AMP
Q411 2SC632A DOLBY NR OUT
IC401 TA7122AP REC EQ AMP
Q412,413,414,415 2SC634A REC EQ SELECT
HRP901-1 PF145-3602A
HRP901-2
RV401 10k-B PB LEVEL (L)
RV402 10k-B REC LEVEL (L)
S601 PB ⟷ REC
D401,402 1T22A DOLBY NR DET
D403 1S1555 DOLBY NR DET
D404 1T40 REVERSE CURRENT STOP
D601,602 1T40 REVERSE CURRENT STOP
R-CH (SAME AS L-CH. REF NO. 500-600)
IC501
S907 FWD
IC701 μPC4558C FG AMP
RM701 DM-101 ROTATION DET
(AUTO-OFF DETECTION AT FF OR REW MODE)
IC702
WAVEFORM SHAPING
TRIGGER PULSE GENERATOR
COMPARATOR
FILTER DC AMP
REG
TAPE SPEED
RV701 20k-B
Q701 2SC634A AUTO-OFF CIRCUIT
IC702 CX065A SERVO CONTROL
Q702 2SA678 SAMPLE HOLD
Q704 2SK43-3 LOW-PASS FILTER
Q706 2SC634A CURRENT AMP
Q705 2SC634A CURRENT LIMITER
Q703 2SC634A AUTO-OFF CIRCUIT
FG901 ROTATION DET (CAPSTAN SHAFT)
M901 MNF-1600D
S906 POWER
CP601 (DC-DC CONVERTER)
S601 PB ⟷ REC
S601-1 S601-2 S601-3 S601-4 S601-5 S601-6 S601-7 S601-8 S601-9 S601-10


[LED BOARD]
D901,902 SLP24B
REC D901
PEAK D902
[LIMITER BOARD]
LINE OUT
CNJ901-3 (L)
CNJ901-4 (R)
S905 LIMITER
ME901 LEFT
ME902 RIGHT
S901 BATT CHECK/LIGHT
S908 REC·PB/MUTE
PL901 METER
D202,102 1T22 METER DET
RV101 10k-B METER LEVEL(L)
RV201 10k-B METER LEVEL(R)
RV301 47k-B BATTERY INDICATION METER
D301 1T40 REVERSE CURRENT STOP
IC304 BX335 SWITCHING
MEMORY LIGHT
MUTING
D101, 201 1T22 METER DET
IC303 BX338 PEAK DET
Q302 2SC634A METER SWITCHING
Q103, 203 2SC634A BUFF AMP
Q301 2SC1474 MEMORY LIGHT DRIVE
IC302 BX336 VOLTAGE AMP
RV902-1 20k-A
RV902-2 20k-A
MONITOR LEVEL
[MONITOR LEVEL CONTROL BOARD]
Q605,606,607 2SC634A SWITCHING
Q604,608 2SA678 SWITCHING
Q416, 516 2SC634A HEADPHONE AMP
Q602,603 2SC634A BIAS OSC
Q609 2SC634A SWITCHING
J903 HEADPHONES
T401
T501
T601
REC BIAS (L)
REC BIAS (R)
Q406 2SC634A DOLBY NR INPUT BUFFER AMP
Q407 2SC634A DOLBY NR CONTROL
Q408,409,410 2SC634A DOLBY NR DET AMP
Q411 2SC632A DOLBY NR OUT
IC401 TA7122AP REC EQ AMP
Q412,413,414, 415 2SC634A REC EQ SELECT
D401,402 1T22A DOLBY NR DET
D403 1S1555 DOLBY NR DET
D404 1T40 REVERSE CURRENT STOP
D601,602 1T40 REVERSE CURRENT STOP
RV402 10k-B REC LEVEL (L)
HE 901 EF168-36A
[SWITCH BOARD]
S904 DOLBY NR
S903 TAPE SELECT
S902 CrO2
IC501
R-CH (SAME AS L-CH. REF NO.500-600)
Q704 2SK43-3 2.2V LOW-PASS FILTER
Q706 2SC634A CURRENT AMP
Q705 2SC634A CURRENT LIMITER
Q702 2SA678 SAMPLE HOLD
Q703 2SC634A AUTO-OFF CIRCUIT
S601 PB ← REC
CP601 (DC-DC CONVERTER)
M901 MNF-1600D
S906 POWER
D801 10E-1 REVERSE CURRENT STOP
Q802 2SA772 STABILIZER CONTROL
Q803 2SC634A STABILIZER CONTROL
IC801 CX184 POWER AMP
Q801 2SC634A SWITCHING
Q804 2SC634A VOLTAGE DET
Q805 2SC634A SWITCHING
[STABILIZER BOARD]
SP901 8Ω
BATTERIES 3V (SIZE "D" x 2)
FWD---290mA
REC---410mA
REW---340mA
FF---240mA
[TRANSISTOR BOARD]
Q901 2SA861-3 SERVO AMP
CNJ902 DC IN 6V

Note:

- All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics.
- All resistors are in ohms, ¼W unless otherwise noted. kΩ : 1000Ω, MΩ : 1000kΩ
- All adjustable resistors have characteristic curve B, unless otherwise noted.
- ☐ : panel designation.
- ☐ : adjustment for repair.
- ——— : B+ bus.
- – – – : B– bus.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no signal conditions with a VOM (20kΩ/V).
- Voltage variations may be noted due to normal production tolerances.

■ : Measured by using a VTVM
[ ] : in record mode
( ) : in FF or REW mode
{ } : When S905 (LIMITER) is set to ON.
(( )) : When S902 (CrO2) is off and S903 (TAPE SELECT) is set to Fr-O2 in record mode.
no mark: in playback mode
The total current is taken with no cassette installed.

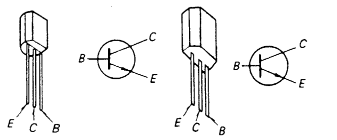
- Switch

Ref. No.	Switch	Position
S301	MIC ATT	0 dB
S601	REC/PB	PB
S901	BATT CHECK/LIGHT	OFF
S902	CrO2	OFF
S903	TAPE SELECT	NORMAL
S904	DOLBY NR	OFF
S905	LIMITER	OFF
S906	POWER	ON
S907	FWD	OFF
S908	REC·PB/MUTE	OFF

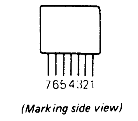
Replacement Semiconductors

For replacement, use semiconductors except in ( ).

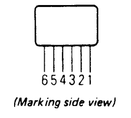
Q101, 102, 201, 202, 401, 402
Q404, 411, 501, 502, 504, 511
2SC1362 (2SC632A)



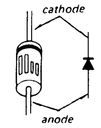
IC302: BX336


7654321
(Marking side view)

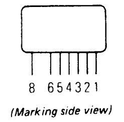
IC303: BX338


654321
(Marking side view)

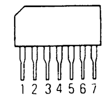
D801: 10E2 (10E1)


cathode
anode

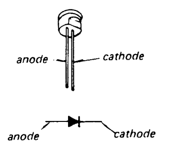
IC304: BX335


8 654321
(Marking side view)

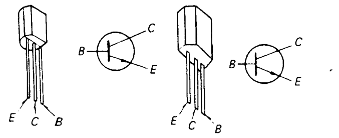
IC401, 501: TA7122AP



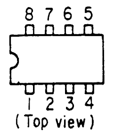
D901, 902
SLP24B


anode
cathode
anode
cathode

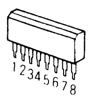
Q103, 203, 302, 403, 405–410
Q412–416, 503, 505–510, 512–516
Q601–603, 605–607
Q609, 701, 703, 705, 706
Q801, 803–805
2SC1364 (2SC634A)



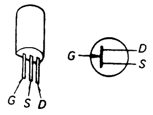
IC701: µPC4558C


8 7 6 5
1 2 3 4
(Top view)

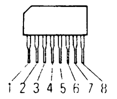
IC702: CX065A



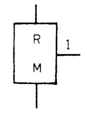
Q704: 2SK43-4
(2SK43-3)



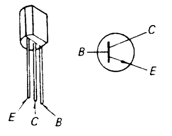
IC801: CX184



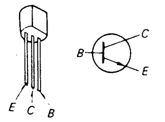
RM701: DM101



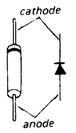
Q104, Q204: 2SC1859



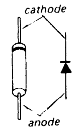
Q301: 2SC1474
(2SC1474-3)



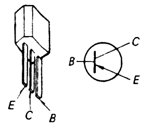
D101, 201
D102, 202
1T22AM (1T22)


cathode
anode

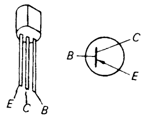
D301, 404, 504
D601, 602, 701
1S1555 (1T40)


cathode
anode

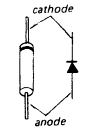
Q604, 608, 702
2SA678



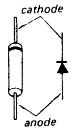
Q802: 2SA772-14
(2SA772)



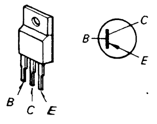
D401, 402, 501, 502
1T22AM (1T22A)


cathode
anode

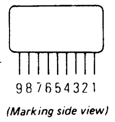
D403, 503: 1S1555


cathode
anode

Q901: 2SA861
(2SA861-3)

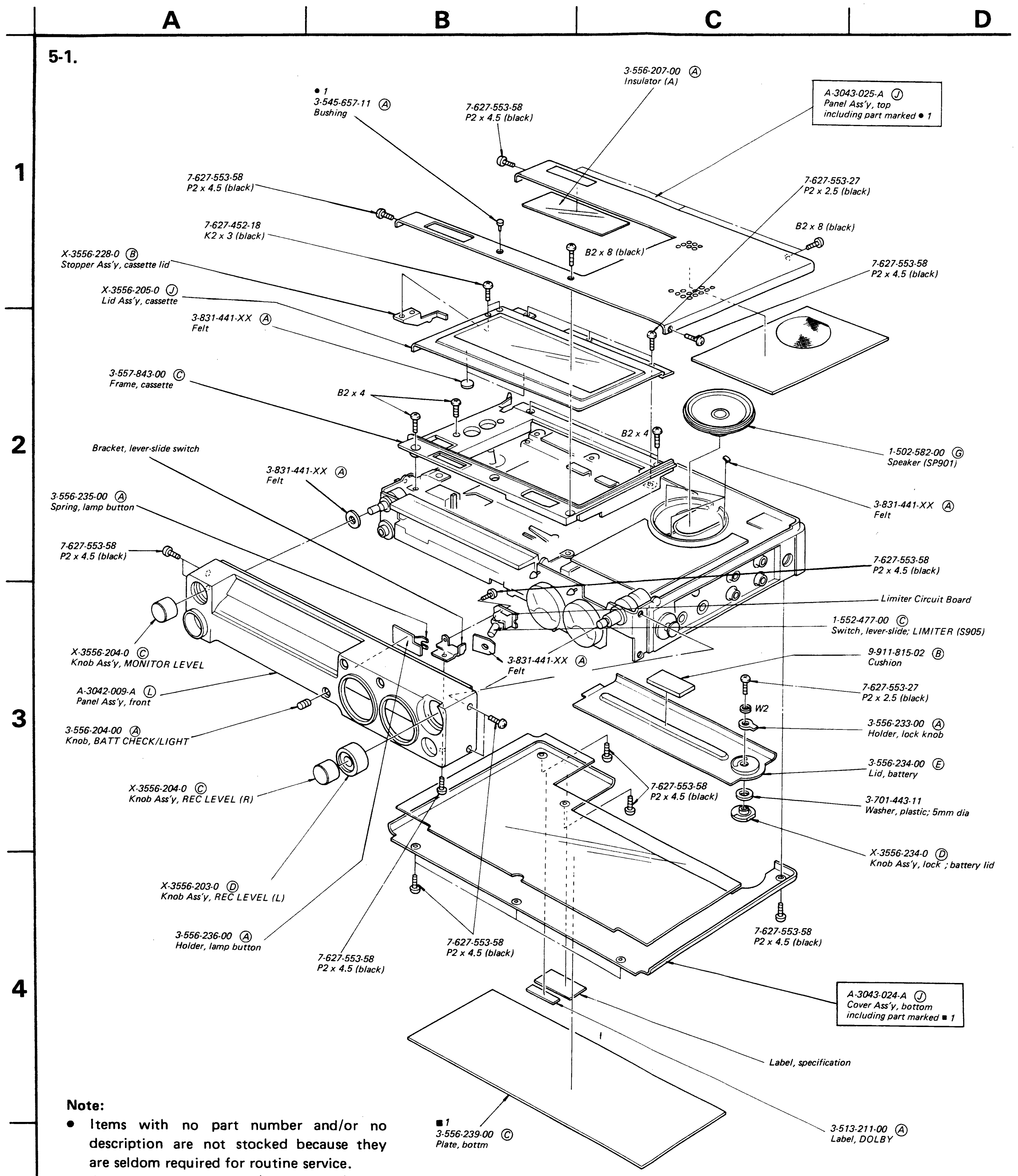


IC301: BX337


987654321
(Marking side view)

SECTION 5
EXPLODED VIEWS

5-1.


A
B
C
D
1
2
3
4
5
• 1
3-545-657-11 Ⓐ
Bushing
7-627-553-58
P2 x 4.5 (black)
3-556-207-00 Ⓐ
Insulator (A)
A-3043-025-A Ⓙ
Panel Ass'y, top
including part marked • 1
7-627-553-58
P2 x 4.5 (black)
7-627-553-27
P2 x 2.5 (black)
B2 x 8 (black)
7-627-452-18
K2 x 3 (black)
B2 x 8 (black)
7-627-553-58
P2 x 4.5 (black)
X-3556-228-0 Ⓑ
Stopper Ass'y, cassette lid
X-3556-205-0 Ⓙ
Lid Ass'y, cassette
3-831-441-XX Ⓐ
Felt
3-557-843-00 Ⓒ
Frame, cassette
B2 x 4
B2 x 4
1-502-582-00 Ⓖ
Speaker (SP901)
Bracket, lever-slide switch
3-831-441-XX Ⓐ
Felt
3-831-441-XX Ⓐ
Felt
3-556-235-00 Ⓐ
Spring, lamp button
7-627-553-58
P2 x 4.5 (black)
7-627-553-58
P2 x 4.5 (black)
Limiter Circuit Board
1-552-477-00 Ⓒ
Switch, lever-slide; LIMITER (S905)
X-3556-204-0 Ⓒ
Knob Ass'y, MONITOR LEVEL
3-831-441-XX Ⓐ
Felt
9-911-815-02 Ⓑ
Cushion
A-3042-009-A Ⓛ
Panel Ass'y, front
7-627-553-27
P2 x 2.5 (black)
W2
3-556-204-00 Ⓐ
Knob, BATT CHECK/LIGHT
3-556-233-00 Ⓐ
Holder, lock knob
3-556-234-00 Ⓔ
Lid, battery
X-3556-204-0 Ⓒ
Knob Ass'y, REC LEVEL (R)
7-627-553-58
P2 x 4.5 (black)
3-701-443-11
Washer, plastic; 5mm dia
X-3556-234-0 Ⓓ
Knob Ass'y, lock ; battery lid
X-3556-203-0 Ⓓ
Knob Ass'y, REC LEVEL (L)
3-556-236-00 Ⓐ
Holder, lamp button
7-627-553-58
P2 x 4.5 (black)
7-627-553-58
P2 x 4.5 (black)
7-627-553-58
P2 x 4.5 (black)
A-3043-024-A Ⓙ
Cover Ass'y, bottom
including part marked ■ 1
Label, specification
■ 1
3-556-239-00 Ⓒ
Plate, bottom
3-513-211-00 Ⓐ
Label, DOLBY

Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

E
D
C
B
A

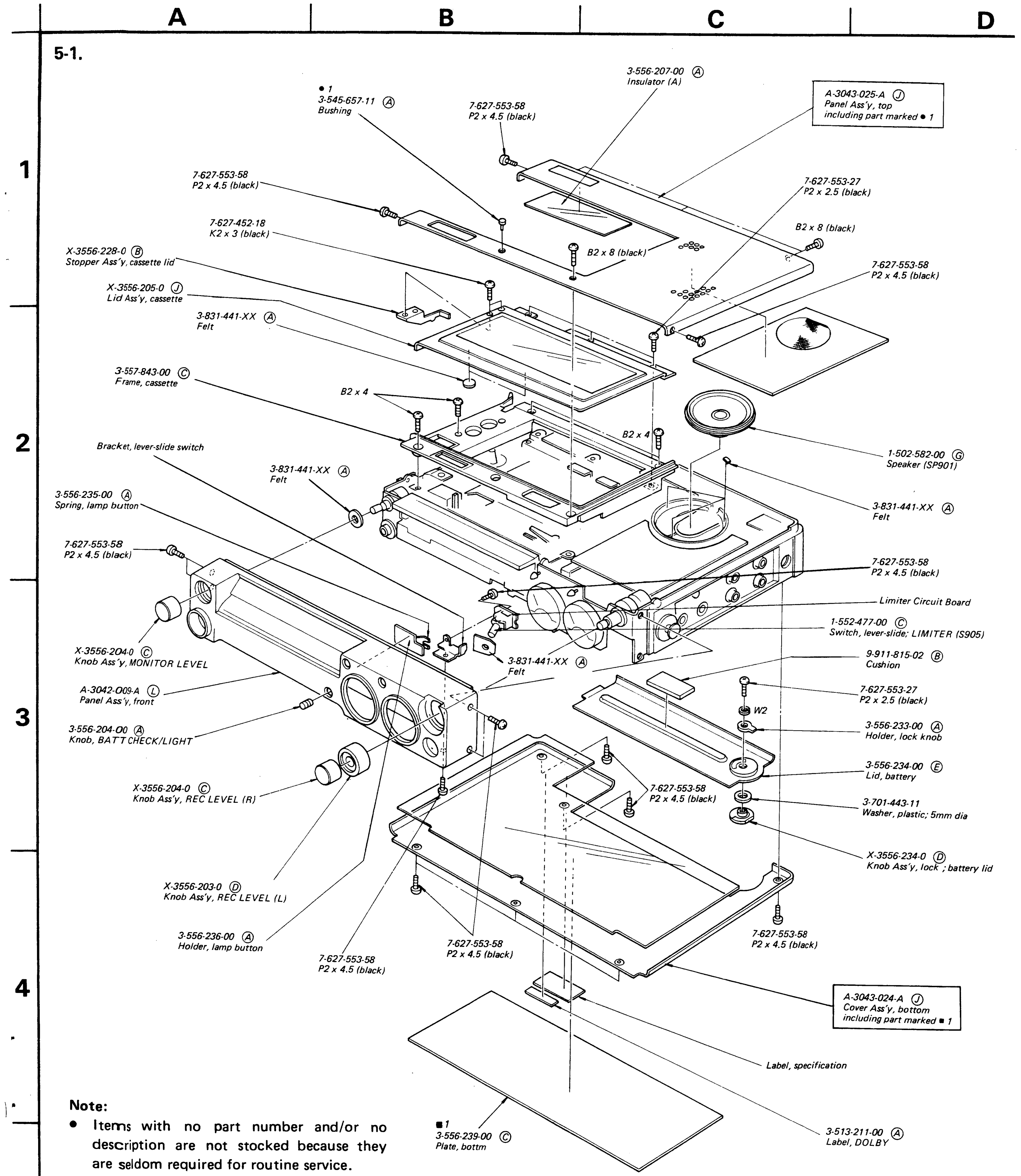
3-556-221-00 Ⓐ

1-552-477-00 Ⓒ Switch, lever slide; TAPE SELECT (S902)

5-2.

SECTION 5
EXPLODED VIEWS

5-1.


A
B
C
D
1
2
3
4
5
● 1
3-545-657-11 Ⓐ
Bushing
7-627-553-58
P2 x 4.5 (black)
3-556-207-00 Ⓐ
Insulator (A)
A-3043-025-A Ⓙ
Panel Ass'y, top
including part marked ● 1
7-627-553-58
P2 x 4.5 (black)
7-627-553-27
P2 x 2.5 (black)
7-627-452-18
K2 x 3 (black)
B2 x 8 (black)
B2 x 8 (black)
X-3556-228-0 Ⓑ
Stopper Ass'y, cassette lid
7-627-553-58
P2 x 4.5 (black)
X-3556-205-0 Ⓙ
Lid Ass'y, cassette
3-831-441-XX Ⓐ
Felt
3-557-843-00 Ⓒ
Frame, cassette
B2 x 4
B2 x 4
1-502-582-00 Ⓖ
Speaker (SP901)
Bracket, lever-slide switch
3-831-441-XX Ⓐ
Felt
3-831-441-XX Ⓐ
Felt
3-556-235-00 Ⓐ
Spring, lamp button
7-627-553-58
P2 x 4.5 (black)
7-627-553-58
P2 x 4.5 (black)
Limiter Circuit Board
1-552-477-00 Ⓒ
Switch, lever-slide; LIMITER (S905)
X-3556-204-0 Ⓒ
Knob Ass'y, MONITOR LEVEL
3-831-441-XX Ⓐ
Felt
9-911-815-02 Ⓑ
Cushion
A-3042-009-A Ⓛ
Panel Ass'y, front
7-627-553-27
P2 x 2.5 (black)
W2
3-556-204-00 Ⓐ
Knob, BATT CHECK/LIGHT
3-556-233-00 Ⓐ
Holder, lock knob
3-556-234-00 Ⓔ
Lid, battery
X-3556-204-0 Ⓒ
Knob Ass'y, REC LEVEL (R)
7-627-553-58
P2 x 4.5 (black)
3-701-443-11
Washer, plastic; 5mm dia
X-3556-234-0 Ⓓ
Knob Ass'y, lock ; battery lid
X-3556-203-0 Ⓓ
Knob Ass'y, REC LEVEL (L)
3-556-236-00 Ⓐ
Holder, lamp button
7-627-553-58
P2 x 4.5 (black)
7-627-553-58
P2 x 4.5 (black)
7-627-553-58
P2 x 4.5 (black)
A-3043-024-A Ⓙ
Cover Ass'y, bottom
including part marked ■ 1
Label, specification
■ 1
3-556-239-00 Ⓒ
Plate, bottm
3-513-211-00 Ⓐ
Label, DOLBY

Note:

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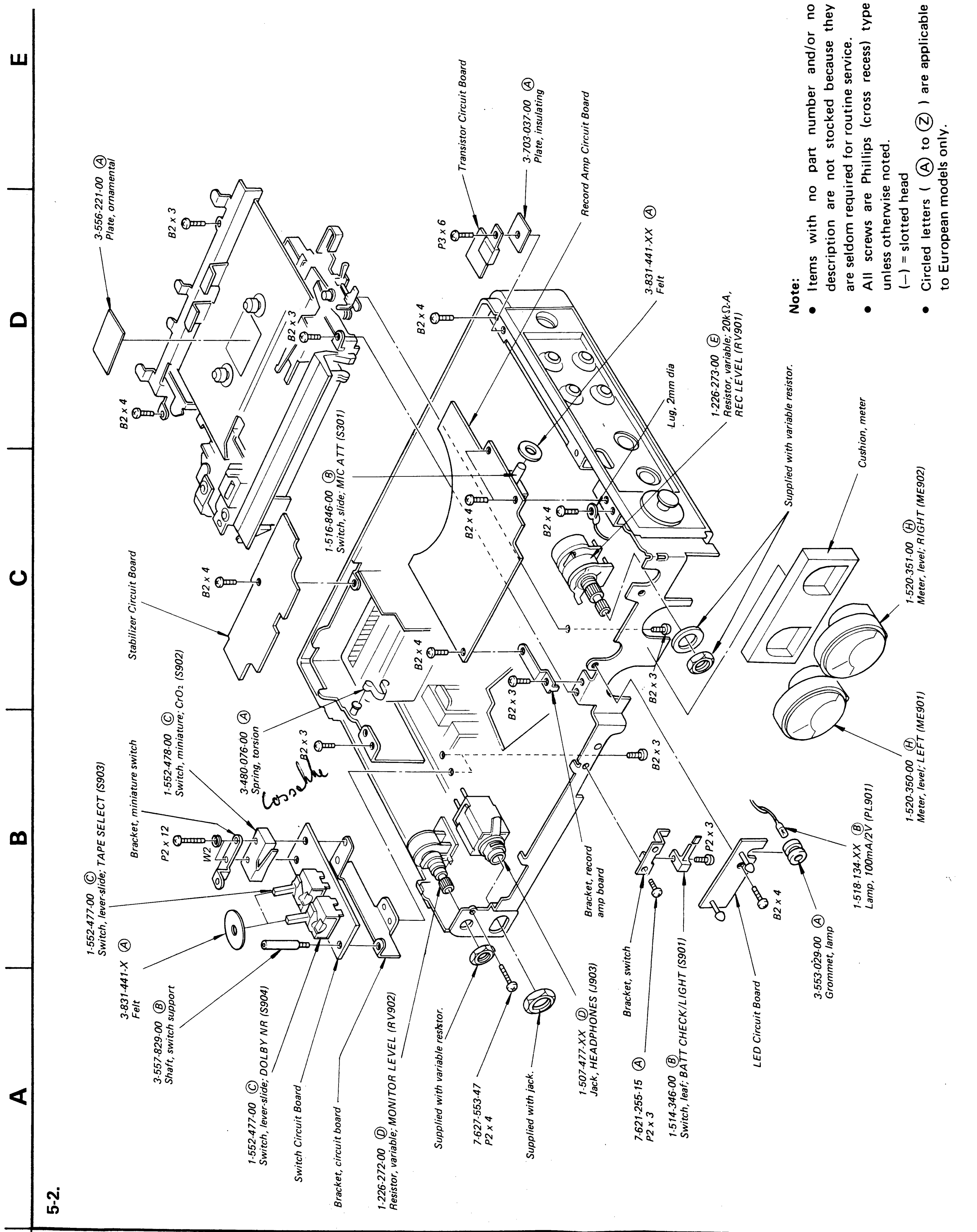
  (–) = slotted head
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

5-2.


E
D
C
B
A
1
2
3
4
3-556-221-00 Ⓐ
Plate, ornamental
B2 x 3
B2 x 3
B2 x 4
P3 x 6
Transistor Circuit Board
3-703-037-00 Ⓐ
Plate, insulating
Record Amp Circuit Board
B2 x 4
3-831-441-XX Ⓐ
Felt
1-516-846-00 Ⓑ
Switch, slide; MIC ATT (S301)
B2 x 4
B2 x 4
Lug, 2mm dia
1-226-273-00 Ⓔ
Resistor, variable; 20kΩ-A,
REC LEVEL (RV901)
Stabilizer Circuit Board
B2 x 4
B2 x 4
Supplied with variable resistor.
Cushion, meter
1-520-351-00 Ⓗ
Meter, level; RIGHT (ME902)
B2 x 3
B2 x 3
1-552-478-00 Ⓒ
Switch, miniature; CrO₂ (S902)
3-480-076-00 Ⓐ
Spring, torsion
B2 x 3
B2 x 3
1-520-350-00 Ⓗ
Meter, level; LEFT (ME901)
1-552-477-00 Ⓒ
Switch, lever-slide; TAPE SELECT (S903)
Bracket, miniature switch
P2 x 12
W2
P2 x 3
1-518-134-XX Ⓑ
Lamp, 100mA/2V (PL901)
Bracket, record
amp board
B2 x 4
3-831-441-X Ⓐ
Felt
3-553-029-00 Ⓐ
Grommet, lamp
3-557-829-00 Ⓑ
Shaft, switch support
Bracket, switch
1-507-477-XX Ⓓ
Jack, HEADPHONES (J903)
LED Circuit Board
Supplied with variable resistor.
1-514-346-00 Ⓑ
Switch, leaf; BATT CHECK/LIGHT (S901)
7-621-255-15 Ⓐ
P2 x 3
7-627-553-47
P2 x 4
Supplied with jack.
1-552-477-00 Ⓒ
Switch, lever-slide; DOLBY NR (S904)
Switch Circuit Board
Bracket, circuit board
1-226-272-00 Ⓓ
Resistor, variable; MONITOR LEVEL (RV902)

Note:

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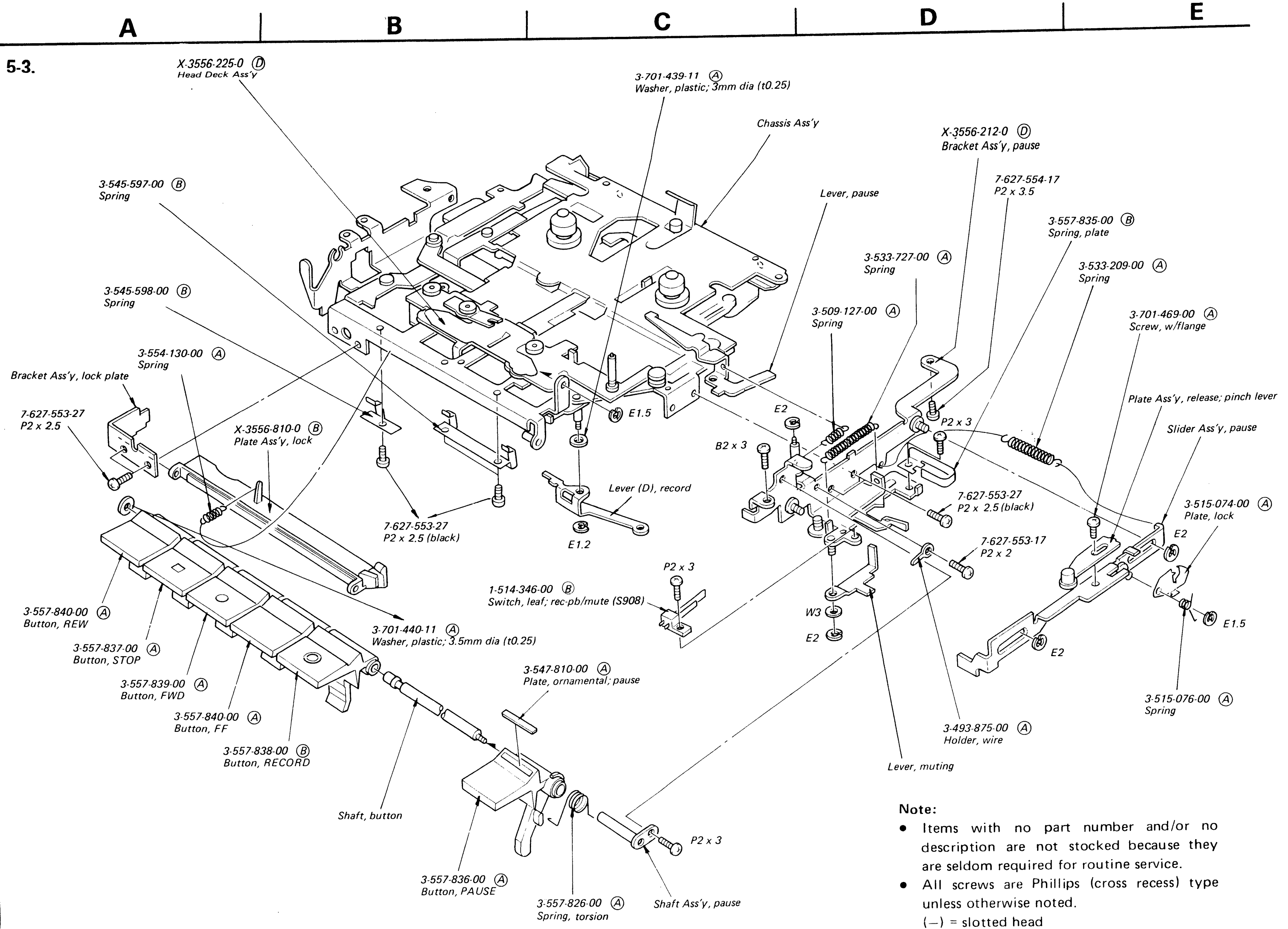
  (–) = slotted head
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

5-3.


A
B
C
D
E
1
2
3
4
X-3556-225-0 Ⓓ
Head Deck Ass'y
3-701-439-11 Ⓐ
Washer, plastic; 3mm dia (t0.25)
Chassis Ass'y
X-3556-212-0 Ⓓ
Bracket Ass'y, pause
7-627-554-17
P2 x 3.5
3-545-597-00 Ⓑ
Spring
Lever, pause
3-557-835-00 Ⓑ
Spring, plate
3-533-727-00 Ⓐ
Spring
3-533-209-00 Ⓐ
Spring
3-545-598-00 Ⓑ
Spring
3-509-127-00 Ⓐ
Spring
3-701-469-00 Ⓐ
Screw, w/flange
3-554-130-00 Ⓐ
Spring
Bracket Ass'y, lock plate
Plate Ass'y, release; pinch lever
7-627-553-27
P2 x 2.5
X-3556-810-0 Ⓑ
Plate Ass'y, lock
E1.5
E2
P2 x 3
Slider Ass'y, pause
B2 x 3
Lever (D), record
7-627-553-27
P2 x 2.5 (black)
3-515-074-00 Ⓐ
Plate, lock
7-627-553-27
P2 x 2.5 (black)
E1.2
E2
7-627-553-17
P2 x 2
P2 x 3
1-514-346-00 Ⓑ
Switch, leaf; rec-pb/mute (S908)
3-557-840-00 Ⓐ
Button, REW
W3
E1.5
E2
3-701-440-11 Ⓐ
Washer, plastic; 3.5mm dia (t0.25)
E2
3-557-837-00 Ⓐ
Button, STOP
3-547-810-00 Ⓐ
Plate, ornamental; pause
3-557-839-00 Ⓐ
Button, FWD
3-515-076-00 Ⓐ
Spring
3-557-840-00 Ⓐ
Button, FF
3-493-875-00 Ⓐ
Holder, wire
3-557-838-00 Ⓑ
Button, RECORD
Lever, muting
Shaft, button
P2 x 3
3-557-836-00 Ⓐ
Button, PAUSE
3-557-826-00 Ⓐ
Spring, torsion
Shaft Ass'y, pause

Note:

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- All screws are Phillips (cross recess) type unless otherwise noted.
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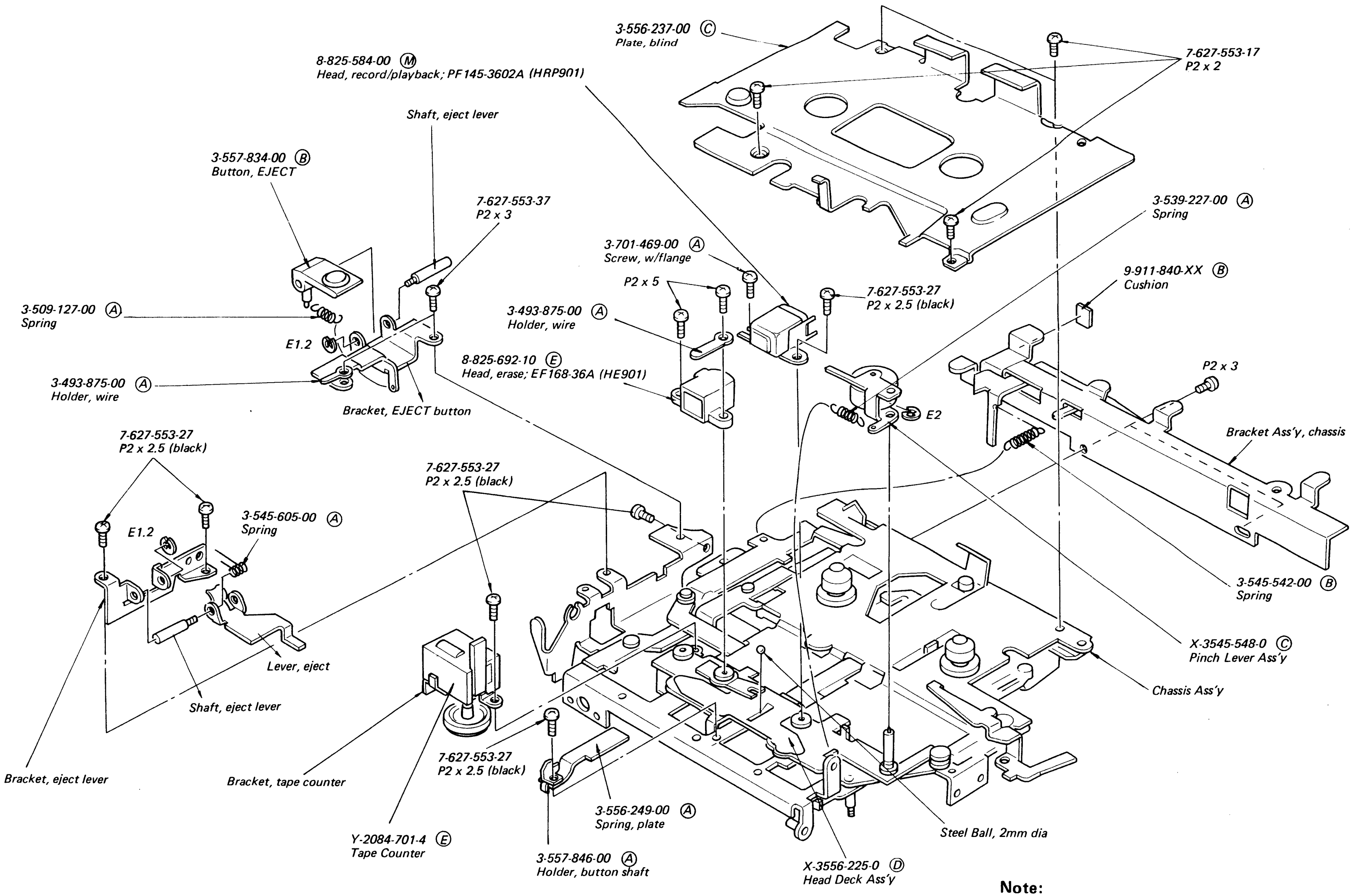
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

5-4.


1
2
3
4
3-556-237-00 Ⓒ
Plate, blind
7-627-553-17
P2 x 2
8-825-584-00 Ⓜ
Head, record/playback; PF145-3602A (HRP901)
Shaft, eject lever
3-557-834-00 Ⓑ
Button, EJECT
7-627-553-37
P2 x 3
3-539-227-00 Ⓐ
Spring
3-701-469-00 Ⓐ
Screw, w/flange
P2 x 5
7-627-553-27
P2 x 2.5 (black)
9-911-840-XX Ⓑ
Cushion
3-509-127-00 Ⓐ
Spring
E1.2
3-493-875-00 Ⓐ
Holder, wire
8-825-692-10 Ⓔ
Head, erase; EF168-36A (HE901)
E2
P2 x 3
3-493-875-00 Ⓐ
Holder, wire
Bracket, EJECT button
Bracket Ass'y, chassis
7-627-553-27
P2 x 2.5 (black)
7-627-553-27
P2 x 2.5 (black)
E1.2
3-545-605-00 Ⓐ
Spring
3-545-542-00 Ⓑ
Spring
X-3545-548-0 Ⓒ
Pinch Lever Ass'y
Lever, eject
Chassis Ass'y
Shaft, eject lever
Bracket, eject lever
Bracket, tape counter
7-627-553-27
P2 x 2.5 (black)
3-556-249-00 Ⓐ
Spring, plate
Steel Ball, 2mm dia
Y-2084-701-4 Ⓔ
Tape Counter
3-557-846-00 Ⓐ
Holder, button shaft
X-3556-225-0 Ⓓ
Head Deck Ass'y

Note:

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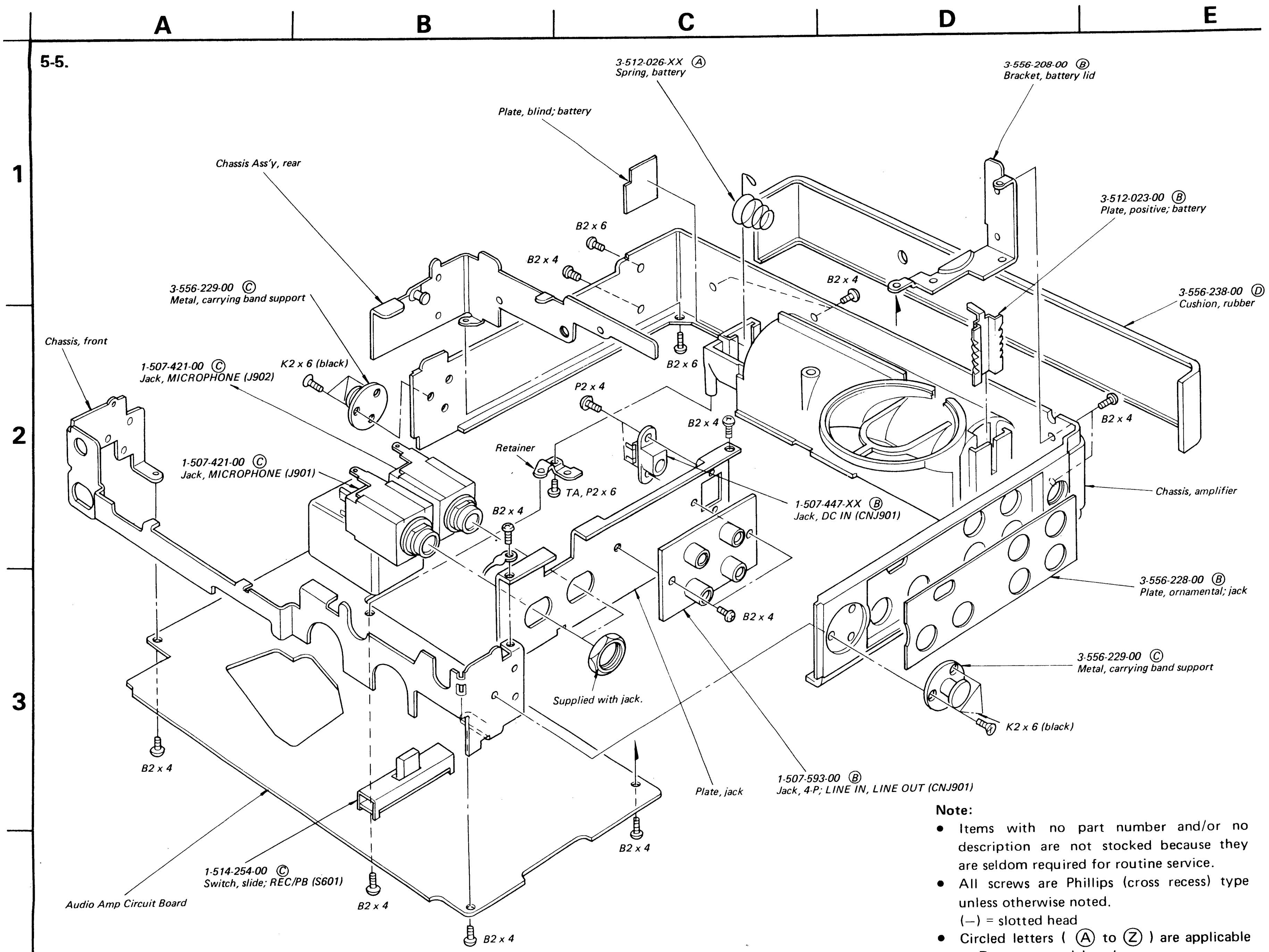
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

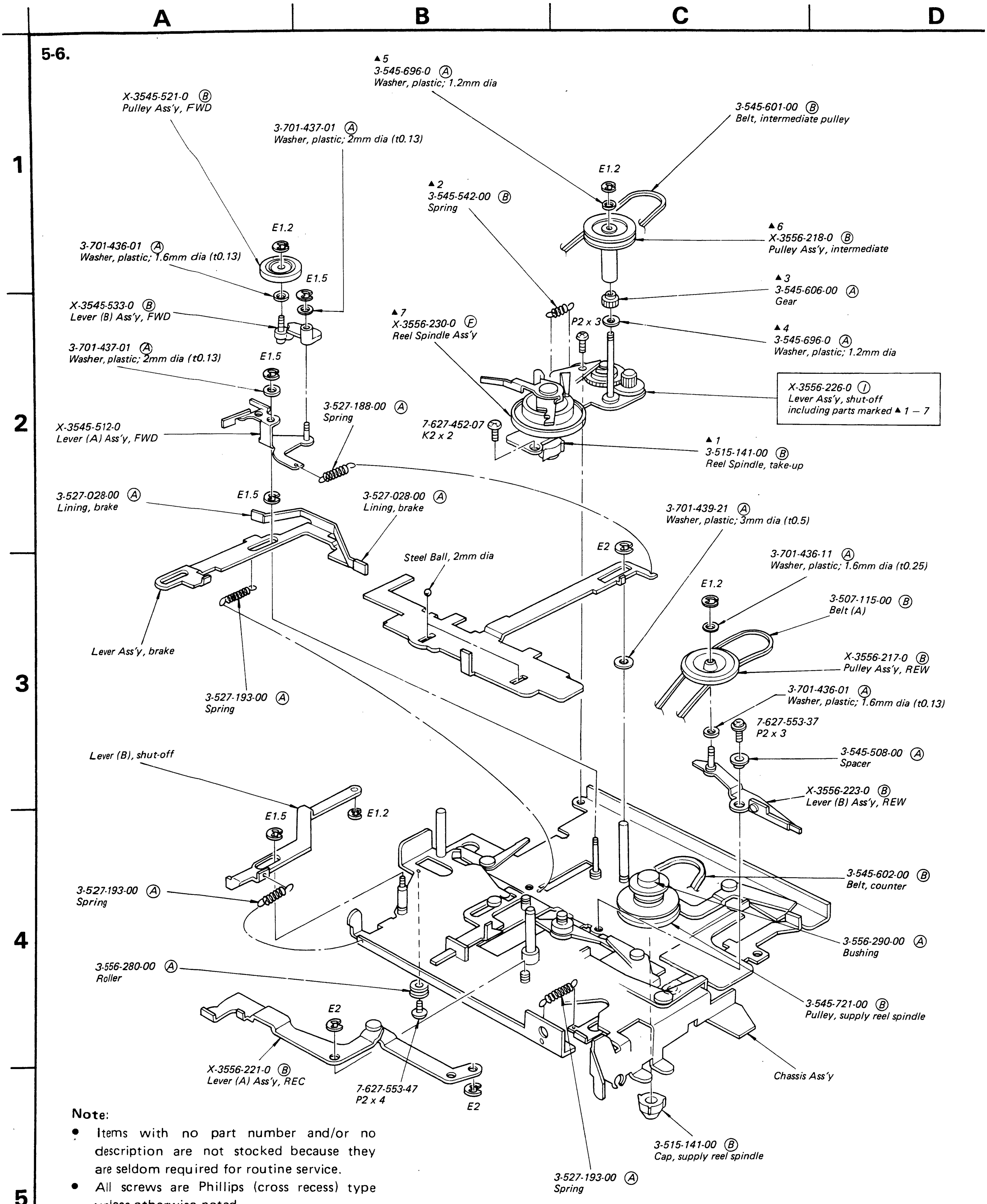
5-5.


A
B
C
D
E
1
2
3
4
3-512-026-XX Ⓐ
Spring, battery
3-556-208-00 Ⓑ
Bracket, battery lid
Plate, blind; battery
Chassis Ass'y, rear
3-512-023-00 Ⓑ
Plate, positive; battery
B2 x 6
B2 x 4
B2 x 4
3-556-238-00 Ⓓ
Cushion, rubber
3-556-229-00 Ⓒ
Metal, carrying band support
Chassis, front
B2 x 6
1-507-421-00 Ⓒ
Jack, MICROPHONE (J902)
K2 x 6 (black)
P2 x 4
B2 x 4
B2 x 4
Retainer
1-507-421-00 Ⓒ
Jack, MICROPHONE (J901)
TA, P2 x 6
1-507-447-XX Ⓑ
Jack, DC IN (CNJ901)
Chassis, amplifier
B2 x 4
3-556-228-00 Ⓑ
Plate, ornamental; jack
B2 x 4
3-556-229-00 Ⓒ
Metal, carrying band support
Supplied with jack.
K2 x 6 (black)
B2 x 4
Plate, jack
1-507-593-00 Ⓑ
Jack, 4-P; LINE IN, LINE OUT (CNJ901)
B2 x 4
1-514-254-00 Ⓒ
Switch, slide; REC/PB (S601)
Audio Amp Circuit Board
B2 x 4
B2 x 4

Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

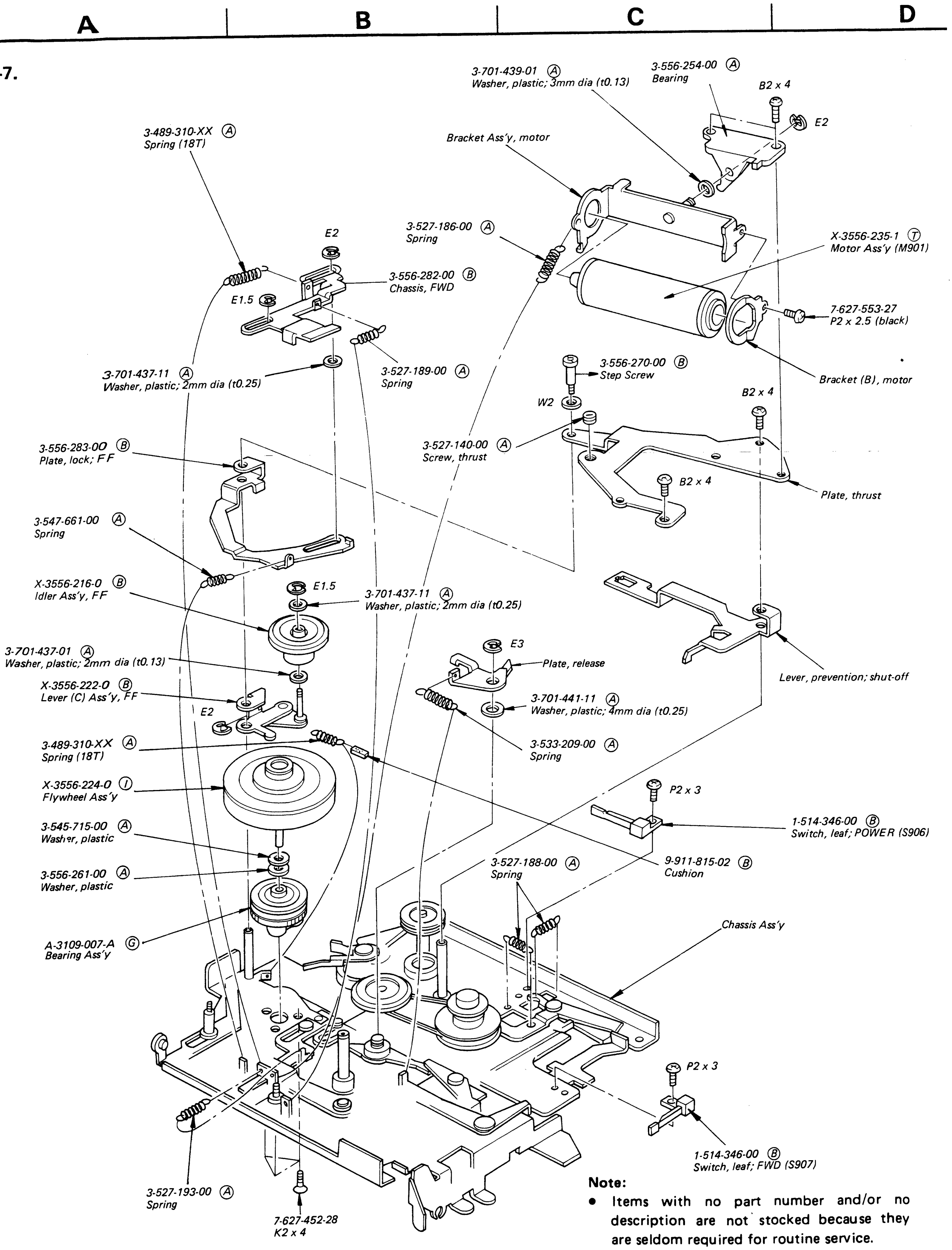
5-6.


A
B
C
D
1
2
3
4
5
▲5
3-545-696-0 Ⓐ
Washer, plastic; 1.2mm dia
X-3545-521-0 Ⓑ
Pulley Ass'y, FWD
3-701-437-01 Ⓐ
Washer, plastic; 2mm dia (t0.13)
3-545-601-00 Ⓑ
Belt, intermediate pulley
E1.2
▲2
3-545-542-00 Ⓑ
Spring
E1.2
▲6
X-3556-218-0 Ⓑ
Pulley Ass'y, intermediate
3-701-436-01 Ⓐ
Washer, plastic; 1.6mm dia (t0.13)
E1.5
▲3
3-545-606-00 Ⓐ
Gear
X-3545-533-0 Ⓑ
Lever (B) Ass'y, FWD
▲7
X-3556-230-0 Ⓕ
Reel Spindle Ass'y
P2 x 3
▲4
3-545-696-0 Ⓐ
Washer, plastic; 1.2mm dia
3-701-437-01 Ⓐ
Washer, plastic; 2mm dia (t0.13)
E1.5
X-3556-226-0 Ⓘ
Lever Ass'y, shut-off
including parts marked ▲1 – 7
3-527-188-00 Ⓐ
Spring
X-3545-512-0
Lever (A) Ass'y, FWD
7-627-452-07
K2 x 2
▲1
3-515-141-00 Ⓑ
Reel Spindle, take-up
3-527-028-00 Ⓐ
Lining, brake
E1.5
3-527-028-00 Ⓐ
Lining, brake
3-701-439-21 Ⓐ
Washer, plastic; 3mm dia (t0.5)
Steel Ball, 2mm dia
E2
3-701-436-11 Ⓐ
Washer, plastic; 1.6mm dia (t0.25)
E1.2
3-507-115-00 Ⓑ
Belt (A)
Lever Ass'y, brake
X-3556-217-0 Ⓑ
Pulley Ass'y, REW
3-701-436-01 Ⓐ
Washer, plastic; 1.6mm dia (t0.13)
3-527-193-00 Ⓐ
Spring
7-627-553-37
P2 x 3
Lever (B), shut-off
3-545-508-00 Ⓐ
Spacer
X-3556-223-0 Ⓑ
Lever (B) Ass'y, REW
E1.5
E1.2
3-545-602-00 Ⓑ
Belt, counter
3-527-193-00 Ⓐ
Spring
3-556-290-00 Ⓐ
Bushing
3-556-280-00 Ⓐ
Roller
3-545-721-00 Ⓑ
Pulley, supply reel spindle
E2
X-3556-221-0 Ⓑ
Lever (A) Ass'y, REC
Chassis Ass'y
7-627-553-47
P2 x 4
E2
3-515-141-00 Ⓑ
Cap, supply reel spindle
3-527-193-00 Ⓐ
Spring

Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

5-7.


A
B
C
D
1
2
3
4
5
3-701-439-01 Ⓐ
Washer, plastic; 3mm dia (t0.13)
3-556-254-00 Ⓐ
Bearing
B2 x 4
E2
3-489-310-XX Ⓐ
Spring (18T)
Bracket Ass'y, motor
E2
3-527-186-00 Ⓐ
Spring
3-556-282-00 Ⓑ
Chassis, FWD
X-3556-235-1 Ⓣ
Motor Ass'y (M901)
E1.5
7-627-553-27
P2 x 2.5 (black)
3-701-437-11 Ⓐ
Washer, plastic; 2mm dia (t0.25)
3-527-189-00 Ⓐ
Spring
3-556-270-00 Ⓑ
Step Screw
W2
Bracket (B), motor
B2 x 4
3-556-283-00 Ⓑ
Plate, lock; FF
3-527-140-00 Ⓐ
Screw, thrust
B2 x 4
Plate, thrust
3-547-661-00 Ⓐ
Spring
X-3556-216-0 Ⓑ
Idler Ass'y, FF
E1.5
3-701-437-11 Ⓐ
Washer, plastic; 2mm dia (t0.25)
3-701-437-01 Ⓐ
Washer, plastic; 2mm dia (t0.13)
E3
Plate, release
Lever, prevention; shut-off
X-3556-222-0 Ⓑ
Lever (C) Ass'y, FF
E2
3-701-441-11 Ⓐ
Washer, plastic; 4mm dia (t0.25)
3-489-310-XX Ⓐ
Spring (18T)
3-533-209-00 Ⓐ
Spring
X-3556-224-0 Ⓘ
Flywheel Ass'y
P2 x 3
3-545-715-00 Ⓐ
Washer, plastic
1-514-346-00 Ⓑ
Switch, leaf; POWER (S906)
3-556-261-00 Ⓐ
Washer, plastic
3-527-188-00 Ⓐ
Spring
9-911-815-02 Ⓑ
Cushion
Chassis Ass'y
A-3109-007-A Ⓖ
Bearing Ass'y
P2 x 3
1-514-346-00 Ⓑ
Switch, leaf; FWD (S907)
3-527-193-00 Ⓐ
Spring
7-627-452-28
K2 x 4

Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- (□□T) shows the number of coils in spring.
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

SECTION 6
ELECTRICAL PARTS LIST

SEMICONDUCTORS

Transistors

Ref. No.	Part No.	Description
⇒ Q101, 201 Q102, 202	8-729-665-47	Ⓑ 2SC1362
⇒ Q103, 203	8-729-663-47	Ⓑ 2SC1364
Q104, 204	8-765-052-20	Ⓑ 2SC1859
⇒ Q301	8-760-335-10	Ⓑ 2SC1474
⇒ Q302	8-729-663-47	Ⓑ 2SC1364
⇒ Q401, 501 Q402, 502	8-729-665-47	Ⓑ 2SC1362
⇒ Q403, 503	8-729-663-47	Ⓑ 2SC1364
⇒ Q404, 504	8-729-665-47	Ⓑ 2SC1362
⇒ Q405–410 Q505–510	8-729-663-47	Ⓑ 2SC1364
⇒ Q411, 511	8-729-665-47	Ⓑ 2SC1362
⇒ Q412–416 Q512–516	8-729-663-47	Ⓑ 2SC1364
⇒ Q601–603	8-729-663-47	Ⓑ 2SC1364
Q604	8-727-788-00	Ⓑ 2SA678
⇒ Q605–607	8-729-663-47	Ⓑ 2SC1364
Q608	8-727-788-00	Ⓑ 2SA678
⇒ Q609, 701	8-729-663-47	Ⓑ 2SC1364
Q702	8-727-788-00	Ⓑ 2SA678
⇒ Q703	8-729-663-47	Ⓑ 2SC1364
⇒ Q704	8-723-304-00	Ⓑ 2SK43-4
⇒ Q705, 706 Q801	8-729-663-47	Ⓑ 2SC1364
⇒ Q802	8-760-514-10	Ⓑ 2SA772-14
⇒ Q803–805	8-729-663-47	Ⓑ 2SC1364
⇒ Q901	8-763-213-00	Ⓒ 2SA861

Diodes

Ref. No.	Part No.	Description
⇒ D101, 201 D102, 202	8-719-422-21	Ⓐ 1T22AM
⇒ D301	8-719-815-55	Ⓐ 1S1555
⇒ D401, 501 D402, 502	8-719-422-21	Ⓐ 1T22AM
D403, 503	8-719-815-55	Ⓐ 1S1555
D404, 504 ⇒ D601, 602 D701	8-719-815-55	Ⓐ 1S1555
⇒ D801	8-719-200-02	Ⓑ 10E2
D901, 902	8-719-900-24	Ⓑ SLP24B
RM701	8-745-101-01	Ⓒ DM101

ICs

Ref. No.	Part No.	Description
IC301	8-743-370-00	Ⓘ BX337
IC302	8-743-360-00	Ⓖ BX336
IC303	8-743-380-00	Ⓕ BX338
IC304	8-743-350-00	Ⓗ BX335
IC401, 501	8-759-271-22	Ⓒ TA7122AP
IC701	8-759-145-58	Ⓓ μPC4558C
IC702	8-759-600-65	Ⓓ CX065A
IC801	8-751-840-00	Ⓕ CX184

Thermistor

Ref. No.	Part No.	Description
⇒ Th801	1-800-198-XX	Ⓒ S-1000

COILS

Ref. No.	Part No.	Description
L101, 201	1-407-879-00	Ⓑ 33mH, microinductor
L102, 202	1-407-938-00	Ⓑ 27mH, variable
L401, 501	1-407-212-XX	Ⓑ 33mH, microinductor
L402, 502	1-407-204-XX	Ⓑ 6.8mH, microinductor
L403, 503	1-407-207-XX	Ⓑ 12mH, microinductor

TRANSFORMERS

Ref. No.	Part No.	Description
T401, 501	1-427-448-00	Ⓒ Output
T601	1-433-200-00	Ⓑ Bias Oscillator

⇒ : Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

CAPACITORS

All capacitors are in μF and tantalum unless otherwise noted. 50WV or less are not indicated except for electrolytics and tantalum. pF : μμF, elect : electrolytic

Ref. No.	*Part No.*	*Description*		
C101, 201	1-131-420-11	Ⓑ 4.7	10V	
C102, 202	1-102-074-11	Ⓐ 0.001		ceramic
C103, 203 C104, 204	1-131-345-11	Ⓑ 0.47	35V	
C105, 205	1-102-074-11	Ⓐ 0.001		ceramic
C106, 206	1-131-377-11	Ⓑ 10	10V	
C107, 207	1-102-971-11	Ⓐ 82p		ceramic
C108, 208	1-161-042-11	Ⓐ 0.0018		ceramic (semiconductor)
C109, 209	1-161-039-11	Ⓐ 0.001		ceramic (semiconductor)
C110, 210	1-108-569-12	Ⓐ 0.0038		mylar
C111, 211	1-108-230-12	Ⓐ 0.0022		mylar
C112, 212	1-131-392-11	Ⓑ 33	3.15V	
C113, 213	1-131-377-11	Ⓑ 10	10V	
C114–117 C214–217	1-131-408-11	Ⓑ 1	35V	
C118, 218 C119, 219	1-102-973-11	Ⓐ 100p		ceramic
C301–303	1-121-414-11	Ⓐ 100	10V	elect
C304	1-121-979-11	Ⓐ 47	6.3V	elect
C305	1-131-392-11	Ⓑ 33	3.15V	
C306	1-131-414-11	Ⓑ 2.2	20V	
C307	1-102-074-11	Ⓐ 0.001		ceramic
C308	1-131-392-11	Ⓑ 33	3.15V	
C401, 501	1-102-112-11	Ⓐ 330p		ceramic
C402, 502	1-131-420-11	Ⓑ 4.7	10V	
C403, 503	1-131-377-11	Ⓑ 10	10V	
C404, 504	1-101-888-11	Ⓐ 68p		ceramic
C405, 505	1-102-074-11	Ⓐ 0.001		ceramic
C406, 506	1-131-420-11	Ⓑ 4.7	10V	
C407, 507	1-108-589-12	Ⓐ 0.027		mylar
C408, 508	1-131-420-11	Ⓑ 4.7	10V	
C409, 509	1-108-355-12	Ⓐ 0.0056		mylar
C410, 510	1-131-414-11	Ⓑ 2.2	20V	
C411, 511	1-102-074-11	Ⓐ 0.001		ceramic

Ref. No.	*Part No.*	*Description*		
C412, 512	1-131-393-11	Ⓑ 47	3.15V	
C413, 513	1-101-888-11	Ⓐ 68p		ceramic
C414, 514	1-131-387-11	Ⓑ 47	6.3V	
C415, 515	1-108-232-12	Ⓐ 0.0033		mylar
C416, 516	1-131-377-11	Ⓑ 10	10V	
C417, 517	1-108-581-12	Ⓐ 0.012		mylar
C418, 518	1-108-579-12	Ⓐ 0.01		mylar
C419, 519	1-108-361-12	Ⓐ 0.056		mylar
C420, 520	1-108-355-12	Ⓐ 0.0056		mylar
C421, 521	1-102-953-11	Ⓐ 18p		ceramic
C422, 522	1-131-377-11	Ⓑ 10	10V	
C423, 523	1-108-232-12	Ⓐ 0.0033		mylar
C424, 524	1-131-414-11	Ⓑ 2.2	20V	
C425, 525	1-108-234-12	Ⓐ 0.0047		mylar
C426, 526	1-131-417-11	Ⓑ 3.3	16V	
C427, 527	1-131-377-11	Ⓑ 10	10V	
C428, 528	1-102-074-11	Ⓐ 0.001		ceramic
C429, 529 C430, 530	1-131-420-11	Ⓑ 4.7	10V	
C431, 531	1-102-937-11	Ⓐ 4p		ceramic
C432, 532	1-102-074-11	Ⓐ 0.001		ceramic
C433, 533	1-131-395-11	Ⓑ 100	3.15V	
C434, 534	1-131-420-11	Ⓑ 4.7	10V	
C435, 535	1-131-341-11	Ⓑ 0.1	35V	
C436, 536	1-131-346-11	Ⓑ 0.68	35V	
C437, 537	1-102-115-11	Ⓐ 560p		ceramic
C438, 538	1-107-169-11	Ⓐ 100p	500V	silvered mica
C439, 539	1-108-581-12	Ⓐ 0.012		mylar
C440, 540	1-108-579-12	Ⓐ 0.01		mylar
C441, 541 C442, 542	1-108-360-12	Ⓐ 0.039		mylar
C443, 543	1-131-345-11	Ⓑ 0.47	35V	
C444, 544	1-131-393-11	Ⓑ 47	3.15V	
C445, 545	1-107-042-11	Ⓐ 2.2p	500V	silvered mica
C446, 546	1-107-253-11	Ⓑ 15+18+22+27p	500V	silvered mica
C601	1-121-651-11	Ⓐ 10	16V	elect
C602–605	1-131-420-11	Ⓑ 4.7	10V	
C606, 607	1-108-373-12	Ⓐ 0.0047	100V	mylar
C608	1-108-579-12	Ⓐ 0.01		mylar

- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

Ref. No.	*Part No.*	*Description*
C609	1-129-708-11	Ⓐ 0.0033 630V film
C610	1-131-414-11	Ⓑ 2.2 20V
C611, 612	1-121-419-11	Ⓐ 220 6.3V elect
C613	1-121-940-11	Ⓑ 470 16V elect
C701	1-161-013-11	Ⓐ 0.01 ceramic (semiconductor)
C702	1-131-377-11	Ⓑ 10 10V
C703	1-102-115-11	Ⓐ 560p ceramic
C704	1-131-341-11	Ⓑ 0.1 35V
C705	1-131-380-11	Ⓑ 33 10V
C706	1-131-414-11	Ⓑ 2.2 20V
C707	1-161-045-11	Ⓐ 0.0033 ceramic (semiconductor)
C708	1-131-414-11	Ⓑ 2.2 20V
C709	1-131-395-11	Ⓑ 100 3.15V
C710	1-161-045-11	Ⓐ 0.0033 ceramic (semiconductor)
C711	1-130-140-11	Ⓑ 0.039 100V film
C712	1-102-112-11	Ⓐ 330p ceramic
C713	1-131-211-11	Ⓑ 0.22 35V
C714–716	1-161-045-11	Ⓐ 0.0033 ceramic (semiconductor)
C717	1-131-380-11	Ⓑ 33 10V
C718	1-131-374-11	Ⓑ 33 16V
C801	1-102-074-11	Ⓐ 0.001 ceramic
C802	1-131-377-11	Ⓑ 10 10V
C803	1-131-408-11	Ⓑ 1 35V
C804	1-131-345-11	Ⓑ 0.47 35V
C805	1-131-380-11	Ⓑ 33 10V
C807, 808	1-161-019-11	Ⓐ 0.033 ceramic (semiconductor)
C809	1-161-045-11	Ⓐ 0.0033 ceramic (semiconductor)
C901	1-102-074-11	Ⓐ 0.001 ceramic

RESISTORS

All resistors are in ohms. Common ¼W carbon resistors are omitted. Refer to the list on page 32 for their resistance values. (kΩ : 1000Ω, MΩ : 1000kΩ)

Ref. No.	*Part No.*	*Description*
R703, 704	1-209-781-11	Ⓐ 10k 1/16W carbon
R705	1-210-840-11	Ⓐ 220k 1/16W carbon
R707	1-210-384-11	Ⓐ 47k 1/16W carbon
R708	1-204-122-11	Ⓐ 1k 1/16W micro
R709	1-210-844-11	Ⓐ 470k 1/16W carbon
R713	1-214-169-11	Ⓐ 36k ¼W metal oxide
R801	1-204-122-11	Ⓐ 1k 1/16W carbon
R802	1-210-355-11	Ⓐ 100 1/16W carbon
R806	1-204-122-11	Ⓐ 1k 1/16W carbon
R807	1-209-777-11	Ⓐ 6.8k 1/16W carbon
R808	1-209-770-11	Ⓐ 2.7k 1/16W carbon
R809	1-209-771-11	Ⓐ 3.9k 1/16W carbon
R810	1-210-840-11	Ⓐ 220k 1/16W carbon
R811	1-210-388-11	Ⓐ 68k 1/16W carbon
R812	1-204-122-11	Ⓐ 1k 1/16W carbon
RV101,201	1-224-252-XX	Ⓑ 10k-B, adjustable; METER LEVEL
RV301	1-224-254-XX	Ⓑ 47k-B, adjustable; BATTERY INDICATION
RV401,501	1-224-252-XX	Ⓑ 10k-B, adjustable; PB LEVEL
RV402,502	1-224-252-XX	Ⓑ 10k-B, adjustable; REC LEVEL.
RV701	1-226-274-00	Ⓒ 20k-B, adjustable; TAPE SPEED
RV901	1-226-273-00	Ⓔ 20k-A, variable; REC LEVEL
RV902	1-226-272-00	Ⓓ 20k-B, variable; MONITOR LEVEL

SWITCHES

Ref. No.	*Part No.*	*Description*
S301	1-516-846-00	Ⓑ Slide, MIC ATT
S601	1-514-254-00	Ⓒ Slide, REC/PB
S901	1-514-346-00	Ⓑ Leaf, BATTERY CHECK/LIGHT
S902	1-552-478-00	Ⓒ Miniature, CrO2
S903–905	1-552-477-00	Ⓒ Lever-slide; TAPE SELECT, DOLBY NR, LIMITER
S906–908	1-514-346-00	Ⓑ Leaf, POWER, FWD, rec·pb/mute

Note: Circled leters (Ⓐ to Ⓩ) are applicable to European models only.

Ref. No.	*Part No.*	*Description*
		JACKS
CNJ901	1-507-593-00	Ⓑ LINE IN, LINE OUT
CNJ902	1-507-447-XX	Ⓑ DC IN
J901, 902	1-507-421-00	Ⓒ MICROPHONE
J903	1-507-477-XX	Ⓓ HEADPHONES
		MISCELLANEOUS
CP601	1-464-081-00	Ⓛ DC-DC Converter
HE901	8-825-692-10	Ⓔ Head, erase; EF168-36A
HRP901	8-825-584-00	Ⓜ Head, record/playback; PF145-3602A
M901	X-3556-235-1	Ⓣ Motor Ass'y
ME901	1-520-350-00	Ⓗ Meter, level (LEFT)
ME902	1-520-351-00	Ⓗ Meter, level (RIGHT)
PL901	1-518-134-XX	Ⓑ Lamp 100mA/2V
SP901	1-502-582-00	Ⓖ Speaker
	1-452-130-00	Ⓑ Magnet

ACCESSORIES & PACKING MATERIALS

Part No.	*Description*
X-3556-236-0	Ⓖ Belt Ass'y, carrying
X-3701-105-0	Ⓐ Tip Ass'y, head cleaning
1-528-022-00	Ⓑ Battery, size "D" (Canadian model)
1-534-049-31	Ⓔ Cord, connection; RK-74H
3-557-850-00	Ⓑ Cushion
3-557-852-00	Ⓓ Carton
3-701-625-00	Ⓐ Bag, plastic
3-701-631-00	Ⓐ Bag, plastic
3-770-516-11	Ⓔ Manual, instruction
3-793-828-11	Ⓐ Card, caution
3-793-956-31	Ⓑ Card, warranty (Canadian model)

1/4 WATT CARBON RESISTORS Ⓐ

Note: Circled letter Ⓐ is applicable to European models only.

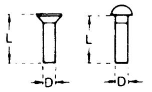
Ω	*Part No.*	Ω	*Part No.*	Ω	*Part No.*	Ω	*Part No.*	Ω	*Part No.*	Ω	*Part No.*	Ω	*Part No.*
1.0	1-244-601-11	10	1-244-625-11	100	1-244-649-11	1.0k	1-244-673-11	10 k	1-244-697-11	100k	1-244-721-11	1.0M	1-244-745-11
1.1	1-244-602-11	11	1-244-626-11	110	1-244-650-11	1.1k	1-244-674-11	11 k	1-244-698-11	110k	1-244-722-11	1.1M	1-244-746-11
1.2	1-244-603-11	12	1-244-627-11	120	1-244-651-11	1.2k	1-244-675-11	12 k	1-244-699-11	120k	1-244-723-11	1.2M	1-244-747-11
1.3	1-244-604-11	13	1-244-628-11	130	1-244-652-11	1.3k	1-244-676-11	13 k	1-244-700-11	130k	1-244-724-11	1.3M	1-244-748-11
1.5	1-244-605-11	15	1-244-629-11	150	1-244-653-11	1.5k	1-244-677-11	15 k	1-244-701-11	150k	1-244-725-11	1.5M	1-244-749-11
1.6	1-244-606-11	16	1-244-630-11	160	1-244-654-11	1.6k	1-244-678-11	16 k	1-244-702-11	160k	1-244-726-11	1.6M	1-244-750-11
1.8	1-244-607-11	18	1-244-631-11	180	1-244-655-11	1.8k	1-244-679-11	18 k	1-244-703-11	180k	1-244-737-11	1.8M	1-244-751-11
2.0	1-244-608-11	20	1-244-632-11	200	1-244-656-11	2.0k	1-244-680-11	20 k	1-244-704-11	200k	1-244-728-11	2.0M	1-244-752-11
2.2	1-244-609-11	22	1-244-633-11	220	1-244-657-11	2.2k	1-244 681-11	22 k	1-244-705-11	220k	1-244-729-11	2.2M	1-244-753-11
2.4	1-244-610-11	24	1-244-634-11	240	1-244-658-11	2.4k	1-244-682-11	24 k	1-244-706-11	240k	1-244-730-11	2.4M	1-244-754-11
2.7	1-244-611-11	27	1-244-635-11	270	1-244-659-11	2.7k	1-244-683-11	27 k	1-244-707-11	270k	1-244-731-11	2.7M	1-244-755-11
3.0	1-244-612-11	30	1-244-636-11	300	1-244-660-11	3.0k	1-244-684-11	30 k	1-244-708-11	300k	1-244-732-11	3.0M	1-244-756-11
3.3	1-244-613-11	33	1-244-637-11	330	1-244-661-11	3.3k	1-244-685-11	33 k	1-244-709-11	330k	1-244-733-11	3.3M	1-244-757-11
3.6	1-244-614-11	36	1-244-638-11	360	1-244-662-11	3.6k	1-244-686-11	36 k	1-244-710-11	360k	1-244-734-11	3.6M	1-244-758-11
3.9	1-244-615-11	39	1-244-639-11	390	1-244-663-11	3.9k	1-244-687-11	39 k	1-244-711-11	390k	1-244-735-11	3.9M	1-244-759-11
4.3	1-244-616-11	43	1-244-640-11	430	1-244-664-11	4.3k	1-244-688-11	43 k	1-244-712-11	430k	1-244-736-11	4.3M	1-244-760-11
4.7	1-244-617-11	47	1-244-641-11	470	1-244-665-11	4.7k	1-244-689-11	47 k	1-244-713-11	470k	1-244-737-11	4.7M	1-244-761-11
5.1	1-244-618-11	51	1-244-642-11	510	1-244-666-11	5.1k	1-244-690-11	51 k	1-244-714-11	510k	1-244-738-11	5.1M	1-244-762-11
5.6	1-244-619-11	56	1-244-643-11	560	1-244-667-11	5.6k	1-244-691-11	56 k	1-244-715-11	560k	1-244-739-11		
6.2	1-244-620-11	62	1-244-644 11	620	1-244-668-11	6.2k	1-244-692-11	62 k	1-244-716-11	620k	1-244-740-11		
6.8	1-244-621-11	68	1-244-645-11	680	1-244-669-11	6.8k	1-244-693-11	68 k	1-244-717-11	680k	1-244-741-11		
7.5	1-244-622-11	75	1-244-646-11	750	1-244-670-11	7.5k	1-244-694-11	75 k	1-244-718-11	750k	1-244-742-11		
8.2	1-244-623-11	82	1-244-647-11	820	1-244-671-11	8.2k	1-244-695-11	82 k	1-244-719-11	820k	1-244-743-11		
9.1	1-244-624-11	91	1-244-648-11	910	1-244-672-11	9.1k	1-244-696-11	91 k	1-244-720-11	910k	1-244-744-11		

HARDWARE NOMENCLATURE

Screw:

– P 3 x 10

L: Length in mm
D: Diameter in mm
Type of head
Indicated slotted-head only.
Unless otherwise indicated, it means
cross-recessed head (Phillips type).

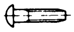
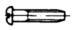
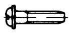
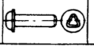
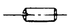
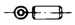
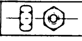
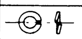


Reference Designation	Shape	Description	Remarks
		SCREWS	
P		pan-head screw	binding-head (B) screw for replacement
PWH		pan-head screw with washer face	binding-head (B) screw and flat washer for replacement
PS PSP		pan-head screw with spring washer	binding-head (B) screw and spring washer for replacement
PSW PSPW		pan-head screw with spring and flat washers	binding-head (B) screw and spring and flat washers for replacement
R		round-head screw	binding-head (B) screw for replacement
K		flat-countersunk-head screw	
RK		oval-countersunk-head screw	
B		binding-head screw	
T		truss-head screw	binding-head (B) screw for replacement
F		flat-fillister-head screw	
RF		fillister-head screw	
BV		braizer-head screw	

Nut, Washer, Retaining ring:

N 3

Diameter of usable screw or shaft
Reference designation

Reference Designation	Shape	Description	Remarks
		SELF-TAPPING SCREWS	
TA		self-tapping screw	ex: TA, P 3 x 10
PTP		pan-head self-tapping screw	binding-head self-tapping (TA, B) screw for replacement
PTPWH		pan-head self-tapping screw with washer face	binding-head self tapping (TA, B) screw and flat washer for replacement
PTTWH		pan-head thread-rolling screw with washer face	binding-head (B) screw and flat washer for replacement
		SET SCREWS	
SC		set screw	
SC		hexagon-socket set screw	ex: SC 2.6 x 4, hexagon socket
		NUT	
N		nut	
		WASHERS	
W		flat washer	
SW		spring washer	
LW		internal-tooth lock washer	ex: LW3, internal
LW		external-tooth lock washer	ex: LW3, external
		RETAINING RINGS	
E		retaining ring	
G		grip-type retaining ring	